

F 7623
1.984
Copy. 3

STATE OF SOUTH CAROLINA

REPORT

S. C. STATE LIBRARY

MAR 14 1985

OF THE

STATE DOCUMENTS

STATE COMMISSION OF FORESTRY

FOR THE YEAR

JULY 1, 1983 TO JUNE 30, 1984



LEONARD A. KILIAN, JR., State Forester

COLUMBIA, S. C.

PRINTED UNDER THE DIRECTION OF THE
STATE BUDGET AND CONTROL BOARD

STATE OF SOUTH CAROLINA

REPORT

OF THE

STATE COMMISSION OF FORESTRY

FOR THE YEAR

JULY 1, 1983 TO JUNE 30, 1984



LEONARD A. KILIAN, JR., State Forester

COLUMBIA, S. C.

**PRINTED UNDER THE DIRECTION OF THE
STATE BUDGET AND CONTROL BOARD**

TABLE OF CONTENTS

	PAGE
ADMINISTRATION DIVISION	10
PERSONNEL	10
Workforce	10
Personnel Turnover	10
Safety	10
Affirmative Action	10
Classification and Compensation	11
FINANCIAL	12
Financial Statement	12
ENGINEERING AND LOGISTICS DIVISION	14
RADIO COMMUNICATIONS	14
MECHANIZED EQUIPMENT	14
Equipment Replacement	14
PURCHASING AND PROPERTY ACCOUNTABILITY	16
CONSTRUCTION AND MAINTENANCE	16
FIELD OPERATIONS DIVISION	17
FOREST MANAGEMENT SECTION	17
Woodland Management Assistance	17
Reforestation Programs	21
State Program	21
Federal Programs	21
Special Seedling Program	22
Forest Services	25
Forest Products Utilization and Marketing	25
Pine Sawtimber and Pulpwood Prices	26
Commodity Drain	26
Industry Assistance	26
Miscellaneous Assistance	26
Resource Conservation and Development	26
Low Country RC&D	26
Ninety Six District RC&D	27
Watersheds	28
Urban Forestry	28
FOREST FIRE PROTECTION SECTION	29
Southeast States Forest Fire Compact Commission	29
Southern States Fire Chiefs	29
South Carolina Disaster Preparedness	30
Rural Fire Protection	30
Fire Protection Title IV	30
Excess Federal Equipment	30

Weather	31
Fire Weather Forecasting	31
Weather Stations	31
Precipitation	31
Readiness Plan	32
Smoke Management	32
Legal Fires	33
Law Enforcement	33
Law Enforcement Officers	33
Summons Law	33
Burning Notification Law	34
Fire Detection	36
Fire Towers	36
Aerial Detection	36
Aerial Fire Retardent Delivery	36
Air Tanker Program	36
Helicopter Delivery Program	37
Forest Fire Suppression	37
NURSERIES AND TREE IMPROVEMENT SECTION	50
Nurseries	50
Research	50
Containerized Seedlings	50
Forest Tree Seed Collection	50
Forest Tree Improvement	51
Seed Orchards	51
Progeny Tests	52
INFORMATION AND EDUCATION SECTION	63
Forest Management	63
Nurseries/Tree Improvement	63
Insect and Disease	63
Forest Fire Prevention	64
Information and Education	64
TRAINING SECTION	66
INSECT AND DISEASE SECTION	67
Major Insect Problems	67
Hardwood Defoliators	67
Southern Pine Beetle	67
Major Disease Problems	68
Pine Tip Blight	68
Oak Wilt	68
Dutch Elm Disease	68
Integrated Pest Management	68
Miscellaneous Insect and Disease Checks	68

STATE FORESTS	69
Cassatt State Forest	70
Harbison State Forest	70
Manchester State Forest	70
Silvicultural Practices	70
Protection	71
Game Management	71
Land Rentals	71
Agricultural Lands	71
Shaw Air Force Base	71
Receipts	72
Regular Operating Budget	72
Niederhof Seed Orchard Development Fund	72
Sandhills State Forest	73
Silvicultural Practices	73
Protection	73
Recreation	73
Game Management	74
Land Rentals	74
Receipts	74
SPECIAL PROJECTS	74
State Lands Forest Management Program	74
APPENDIX	76
Organization Chart	76
History	77

*To Honorable Richard W. Riley, Governor and to the
General Assembly of South Carolina:*

Sirs:

Pursuant to Section 3 of Act of General Assembly creating the State Commission of Forestry, approved April 26, 1927, which provides that the Commission shall "inquire into and make annual report upon forest conditions in South Carolina, with reference to the preservation of forests, the effect of the distribution of forests upon the general welfare of the State, and other matters pertaining to the subject of Forestry and tree growth including recommendations to the public generally as to reforestation." I have the honor to submit the report of the Commission for the period of July 1, 1983 to June 30, 1984.

Respectfully submitted

STATE COMMISSION OF FORESTRY

C. H. Niederhof

STATE COMMISSION OF FORESTRY

C. H. Niederhof, Chairman

MEMBERS OF THE COMMISSION

C. H. Niederhof, *Chairman*, Goose Creek

Eugene H. Kneece, Jr., *Vice Chairman*, Aiken

Boris Hurlbutt, Walterboro

Joseph C. Woodard, Sr., Eastover

Henry F. Floyd, Pickens

Joe Brice Williamson, Kingstree

John Edward Bankhead, Richburg

Bartow S. Shaw, Jr., Sumter

Dr. Bill L. Atchley, *President*, *Clemson University*, Clemson

ADMINISTRATION

Leonard A. Kilian, Jr., State Forester and Secretary to the Commission

Claude F. Barden, Executive Assistant to State Forester

Chauncey R. Nichols, Staff Director

John M. Shirer, Assistant State Forester/Engineering and Logistics

Robert J. Gould, Assistant State Forester/Field Operations

Charles F. Moore, Assistant State Forester/Administration

MAJOR ACCOMPLISHMENTS

- Suppressed 6,086 wildfires which burned 26,650 acres.
- Performed 2,699 woodland examinations for landowners covering 183,907 acres.
- Produced 50.1 million forest tree seedlings — enough to reforest 69,000 acres.
- Provided technical assistance for 691 applications for reforestation under federal cost sharing programs paying \$1,046,000 for reforestation or improvement of over 17 thousand acres.
- Processed and approved state Forest Renewal Program applications on 147 tracts with \$386,827 paid to landowners for reforestation or improvement of 5,000 acres.
- Purchased 1,594 acres and established a new seed orchard site in Jasper County with 7.2 acres of grafted trees established.
- Forest services for reforestation and protection of woodland provided on 860 tracts and landowners paid \$102,831 for this.
- Marked timber for private landowners on 171 tracts with 4.9 million board feet of sawtimber and 10,000 cords of pulpwood designated for cutting. Landowners paid \$17,459.97 for this service.
- Prosecuted 71 forest fire law violations.
- Conducted forest fire suppression training for 435 Rural Fire Department volunteers in 19 departments.
- Evaluated five hardwood defoliator outbreaks and southern pine beetle problems in 19 counties and recommended treatments.
- Assisted other state agencies in the sale of timber worth \$309,000.
- Constructed a tree seedling lifter for nursery program.
- Constructed a new shop at Walterboro.
- Assisted in salvage of over 60 million board feet of timber damaged by March tornados.
- Presented 875 programs to over 45,000 people on forest fire prevention and forest management.

ADMINISTRATION DIVISION

The Division of Administration supports the Forestry Commission's employees and programs through policies and procedures relating to budgeting, accounting and personnel services.

PERSONNEL SECTION

The Personnel Section administers personnel management programs and policies for the Forestry Commission. Major program areas are classification and compensation, personnel and position records management, recruitment, employee benefits, affirmative action, safety and health, and employee benefits.

Workforce

The South Carolina Forestry Commission has a total of 610 authorized full time equivalent positions classified in 54 separate job categories. This represents an increase of 5 positions approved for the newly established Niederhof Seed Orchard.

Personnel Turnover

An analysis of employee termination data reveals that 49 employees left their jobs during the fiscal year. There were 63 employees hired.

Safety

Most Commission personnel work in positions having a higher than normal risk of injury. The safety program is directed toward reducing this risk. It includes specialized training on hazardous operations, installing guards and protective devices on equipment, and providing personal protective equipment such as hard hats and goggles where needed. In addition, safety is stressed by supervisors in regular personnel meetings. Even with these precautions, there were 56 job related injuries reported this fiscal year. Most of these were minor with only 1 resulting in hospitalization. A total of 143 work days were lost due to accidental injuries.

Motor vehicle accidents increased from the preceding year with four accidents occurring. Two of these were classified as being preventable by the operator.

Affirmative Action

Affirmative Action has become a permanent part of our operation and was emphasized to supervisors through training sessions as well as by the

State Forester. We began development of a new Affirmative Action Plan during the year and all segments submitted to the South Carolina Human Affairs Commission have been approved.

Affirmative Action Plan during the year and all segments submitted to the South Carolina Human Affairs Commission have been approved.

Classification and Compensation

Classification and compensation studies were conducted and implemented during the year for the following job categories:

Tower Attendant I
Tower Attendant II
Fire Warden

County Ranger
Forestry Technician
Trades Positions

FINANCIAL STATEMENT
S. C. FORESTRY COMMISSION
Fiscal Year 1983-84

BROUGHT FORWARD

From Fiscal Year 1982-83		
Federal	2,004.66	
Sandhills Forest Federal	403,824.86	
Savings Bond Deductions	60.96	
Operating Revenue	38,264.77	
Seedling Revolving	574.65	
Forest Renewal Assessment	355,412.34	
Total Brought Forward		800,142.24

RECEIPTS

Operating Funds		
<i>State Funds</i>		
Appropriation	10,966,875.00	
Supplemental Appropriation	1,242,678.00	
Transfer from Civil Contingency Fund ...	11,000.00	
		12,220,553.00

<i>Federal Funds</i>		
Federal Grants	931,172.31	
Sandhills Forest Federal	583,924.79	
		1,515,097.10

<i>Other Funds</i>		
Manchester — Hunting, Fishing Permits ..	10,754.55	
Pinestraw & Miscellaneous ..	8,811.26	
Land Rent	43,399.00	
Timber Sales	366,747.41	
Sale of Services	3,439.22	
Insurance Claims	33,716.31	
Rent — Equipment	2,172.00	
Forest Products Assessment	538,382.14	
		1,007,421.89

<i>Trust Funds</i>		
Seedling Revolving	20,000.00	
Savings Bond Deductions	6,172.50	
Performance Bonds	2,000.00	
		28,172.50

<i>Capital Funds</i>		
Capital Improvement Bonds	137,673.11	
Capital Project Other Funds	358,409.00	
Capital Project Revenue	1,000,000.00	
		1,496,082.11

Total Receipts Retained by Forestry Commission	16,267,326.60
---	---------------

General Fund

Hunting & Fishing Permits	379.00	
Prescribed Burning	31,917.00	
Firebreak Plowing	48,732.35	
Timber Marking	17,459.97	
Miscellaneous Fees	178.18	
Nursery & Timber Sales	991,441.55	
Land Rental	4,698.25	
Equipment Rent	23,501.34	
Indirect Costs	67,095.34	
Total General Fund		1,185,402.98
GRAND TOTAL		
FUNDS AVAILABLE		18,252,871.82

DISBURSEMENTS:

Transferred to the General Fund	1,185,402.98	
Appropriation Lapse to the General Fund	1,346.24	
Expenditures	14,617,631.32	
Total Disbursements		15,804,380.54

BALANCE CARRIED FORWARD	2,448,491.28
-------------------------------	--------------

Detail — Balance Carried Forward

Supplemental Appropriation	1,242,678.00
Sandhills Forest Federal	389,598.25
Operating Revenue	187,292.27
Forest Renewal Assessment	573,330.66
Federal	52,946.49
Savings Bond Deductions	70.96
Seedling Revolving	574.65
Performance Bonds	2,000.00
TOTAL	2,448,491.28

ENGINEERING & LOGISTICS DIVISION

The Engineering and Logistics Division provides staff service to all units of the Forestry Commission in matters relating to communications, purchasing, transportation of supplies and equipment, maintenance of equipment and permanent improvements, new construction, and property accountability.

Radio Communications

The Forestry Commission's two-way radio communication system dates back to the early 1950's. The majority of radio units have been in service for more than fifteen years and many are in the 20-25 year age group. Forest fire fighting is an extremely hazardous activity and equipment operators working ahead of dangerous forest fires must rely on good communications to operate efficiently and avoid serious injuries and loss of life.

Two-way radio provides the only efficient and effective communications in the forestry program and particularly forest fire control. Radio is used to dispatch units to the fire location, to direct units to the fire line, to assign tasks and to report needs and situation data from the fire line.

From the first experimental use of radio in 1946, the Forestry Commission system has expanded to include radio units in every fire suppression unit, transport, tower, ranger truck, and overhead supervisor responsible for fire suppression. The Columbia Office, District Offices, two State Forests and two Nurseries are radio equipped. All rangers and many foresters are equipped with portable radio sets. Six airplanes are radio equipped and, in season, aerial tankers are supplied with radio sets.

In hazardous work situations, such as fire fighting, safety is a major consideration. An operating two-way radio is an essential safety device for any person operating on the fire line.

Mechanized Equipment

All regular and specialized fire control equipment is modified and processed for field use at the Commission's Central Repair Shop in Columbia. During the year central shop personnel made numerous repairs to Forestry Commission vehicles and equipment and manufactured many special fire control and forest management items. Some of the work conducted at the central shop included:

- modification of transport bodies;
- repair of medium tractors for field use;
- rebuilt fire plows;
- modified safety canopies;

- modified and repaired specialized equipment for use in aerial tanker program;
- rebuilt wrecked equipment;
- provided maintenance assistance to the district repair shops;
- performed major equipment overhauls and repairs on field equipment;
- constructed a tree seedling lifter for use in the nursery program.

Equipment Replacement

Insufficient funds have been available to maintain the equipment replacement schedule for the past five years. As the equipment is continued in use beyond economical age the reliability and state of readiness diminishes.

The continued use of old, unreliable fire suppression equipment will result in accelerated annual forest fire losses particularly in high value pine plantations. Fire suppression equipment is the backbone of the fire protection program and if it is not replaced in an orderly manner and kept in a high degree of readiness, the Forestry Commission cannot meet its fundamental requirement to provide adequate protection to this important resource. New replacement equipment, as purchased from the various manufacturers must be processed through our central repair shop and adapted to the specialized job of suppressing wild fires.

The Forestry Commission fire control organization operates a fleet of approximately 500 trucks and tractors, many of which have seen considerable service and require extensive repairs. As the equipment is kept in service beyond the economical replacement age more and more failures are experienced and repairs become more frequent.

Summary of fire control transports/tractor replacement purchases for the last 10 years.

<i>Year</i>	<i>Number</i>	<i>Year</i>	<i>Number</i>
1974-75	28 Units *	1979-80	11 Units
1975-76	30 Units	1980-81	1 Unit
1976-77	25 Units	1981-82	0 Unit
1977-78	12 Units	1982-83	0 Unit
1978-79	14 Units	1983-84	0 Unit

* Unit = 1 Truck and 1 Tractor

Purchasing And Property Accountability

The purchasing section directs and coordinates the purchasing and warehousing activities. The section establishes specifications for the purchase of all Commission equipment and supplies and supervises the central warehouse function which carries an inventory of over 300 items, repair parts and supplies that are available to field units upon request. The fixed assets record of property accountability now contains 6,874 items which are maintained and inventoried each year.

Purchasing section personnel visit with field locations in order to keep Commission personnel advised on changes in the S. C. State Procurement Code and to assist with other problems that arise in purchasing.

Construction And Maintenance

During the year Forestry Commission personnel contracted, designed, planned, purchased materials, and scheduled work crews to conduct maintenance and construction of capital improvements at substantial savings. Major projects included:

- Completion of a new 6,000 sq ft. shop building at Walterboro
- Installation of one irrigation valve at Tilghman Nursery
- Construction of one slat house at Creech Seed Orchard
- Renovations to three buildings acquired through recent land purchase at Niederhof Seed Orchard
- Began construction of office at Niederhof Seed Orchard
- Began construction of Walterboro District Office
- Painted exterior of Central Office and roofs of central shop complex.

FIELD OPERATIONS DIVISION

The Field Operations Division provides operational and technical staff direction to the Forestry Commission field organization in each of the major program areas of forest management, forest fire protection, nurseries and tree improvement, information and education, forest insects and diseases and overall agency training.

FOREST MANAGEMENT SECTION

The Forest Management Section assists South Carolina citizens with management and development of the forest resources of the state. Programs include Woodland Management Assistance, Reforestation Programs, Forestry Services, Forest Products Utilization and Marketing Assistance, Resource Conservation and Development, Watersheds, and Urban Forestry. These programs assist owners in growing more timber, aid industries in more efficient utilization of the timber resource, and foster conservation of the forest resource.

There are 12.5 million acres of forest land in South Carolina. According to the 1978 US Forest Service Survey, 73% of the land is owned by farmers and miscellaneous private owners. Forest industry owns approximately 18% with 9% in public ownership.

Based on the 1978 survey of South Carolina's forest resources, each year approximately 200,000 acres are harvested. Of this total, about 161,000 acres are regenerated adequately, either naturally or by planting. Approximately 39,000 acres are left with little or no merchantable tree species. Recent information from the 1983 Interim Pine Survey indicates that harvest rates have increased considerably as well as the number of acres left without adequate regeneration.

Woodland Management Assistance

Professional foresters provide forest management advice and assistance to landowners. The land is examined and a written forest management plan is prepared. Recommendations for management may include forest protection, reforestation, harvesting, prescribed burning, wildlife habitat improvement, and recreation. This year 2,699 management plans were prepared for 183,907 acres.

Where practical, the landowner is referred to consulting or industrial foresters to assist in carrying out the management recommendations. This year 649 cases were referred to consulting foresters with 441 cases referred to industrial foresters.

Commission foresters provide timber marking services to landowners on a limited basis. For this service there is a charge of \$2 per thousand

board feet of sawtimber and 60* per cord of wood. This year 171 tracts were marked, with 4,936,962 board feet of sawtimber and 10,090 cords of pulpwood designated for cutting.

Prescribed burning plans are also prepared for landowners who require this service. Fire as a forest management tool is recommended for control of weed trees, seedbed preparation, control of brown spot disease in longleaf pines, reduction of hazardous fuels, and improved wildlife habitat.

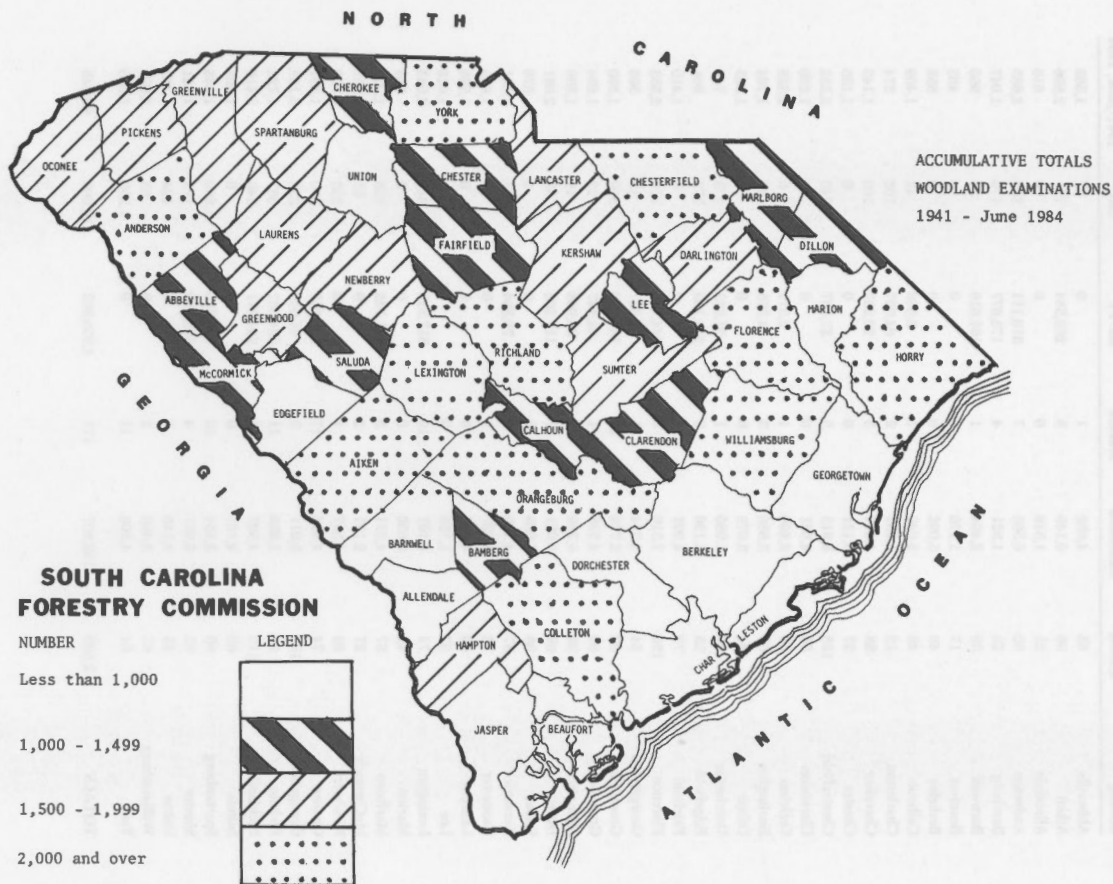
On March 28, 1984 a series of disastrous tornados ripped through upper South Carolina. One began its destructive path in Abbeville and Anderson and continued into Laurens County. Another began its path just west of Newberry and continued through Fairfield, Kershaw, Lancaster, Chesterfield, and Marlboro Counties. All these counties received timber damage with Fairfield County being hardest hit with over eight thousand acres affected.

On April 2, 1984 the State Forester declared the existence of a forest disaster and activated the Forest Disaster Plan. On April 12, a meeting of the Foresters Council of South Carolina was held with additional representatives from forest industries and Forestry Commission personnel. At this meeting all parties agreed to cooperate in the salvage of tornado damaged forest products.

It is estimated that 70 to 80 percent of the damaged timber will be salvaged. There will be some areas, however, where the volume of damaged timber is too low to be salvaged economically. At the close of the fiscal year over 60 million board feet of timber, both pine and hardwood, had been salvaged. All forest industries worked diligently in this effort and some salvage will continue for several months.

WOODLAND MANAGEMENT ASSISTANCE 1983-84

County	Woodland Exams	Acres Examined	Tracts Marked	Volume Marked		Total Woodland Examinations 1941-June, 1984
				Bd. Ft.	Cds.	
Abbeville	63	4,052	1	0	37	1,383
Aiken	96	9,149	8	202,584	711	2,696
Allendale	21	1,516	0	0	0	616
Anderson	80	6,568	7	310,111	254	2,685
Bamberg	26	1,821	4	173,677	176	1,047
Barnwell	39	2,404	1	161,616	59	950
Beaufort	17	1,170	0	0	0	463
Berkeley	48	3,092	0	0	0	658
Calhoun	49	2,649	1	8,069	42	1,409
Charleston	12	1,159	2	64,087	102	574
Cherokee	38	4,444	3	20,237	160	1,143
Chester	37	3,121	0	0	0	1,135
Chesterfield	128	8,913	5	27,887	240	2,252
Clarendon	56	4,061	0	0	0	1,280
Colleton	59	2,890	1	2,571	0	2,328
Darlington	65	3,686	3	44,575	50	1,764
Dillon	44	3,078	0	0	0	1,365
Dorchester	30	1,985	1	37,823	3	748
Edgefield	35	3,130	3	254,153	372	801
Fairfield	79	4,991	0	0	0	1,410
Florence	120	7,516	9	944,485	370	2,553
Georgetown	24	3,944	1	42,347	15	505
Greenville	69	2,778	10	187,670	599	1,590
Greenwood	60	4,598	1	44,447	22	1,684
Hampton	99	6,792	1	36,998	16	1,536
Horry	69	4,081	7	117,202	88	2,081
Jasper	36	7,069	0	0	0	578
Kershaw	57	4,120	2	79,864	32	1,691
Lancaster	72	4,827	2	0	54	1,685
Laurens	60	4,343	0	0	0	1,598
Lee	37	1,754	0	0	0	1,022
Lexington	74	4,161	19	517,523	1,341	2,043
Marion	42	3,636	0	0	0	683
Marlboro	57	4,251	5	51,742	138	1,030
McCormick	27	2,121	2	0	65	1,207
Newberry	69	4,557	1	0	233	1,700
Oconee	74	4,924	17	255,955	860	1,891
Orangeburg	102	5,011	3	97,038	200	3,166
Pickens	60	2,859	11	524,537	367	1,722
Richland	113	4,597	9	201,871	240	2,416
Saluda	60	4,101	0	0	0	1,308
Spartanburg	60	3,154	13	195,733	1,650	1,643
Sumter	62	3,987	4	332,160	175	1,631
Union	43	3,146	1	0	104	765
Williamsburg	67	3,493	2	0	65	2,007
York	64	4,208	11	0	1,250	2,206
TOTALS	2,699	183,907	171	4,936,962	10,090	68,648



REFORESTATION PROGRAMS

State Program

Forestry Renewal Program (FRP)

The South Carolina legislature, recognizing the south's unique potential to supply the nation's continuing demand for forest products, established the Forest Renewal Program (FRP) in 1981. The program provides financial cost sharing assistance to private woodland owners in reforestation cut-over and understocked forest land. With the support of forest industry, the program is jointly funded through an assessment of those industries producing primary wood products and an appropriation by the state legislature.

In 1982 the program was funded for the first time by a \$100,000 state appropriation. This permitted an assessment of \$400,000 from forest industry, and created a \$500,000 Forest Renewal Fund.

The program was funded at the same level for 1983.

1983-84 Forest Renewal Program Accomplishments

Practices	Applications (Funded)		Acres		Dollars	
	Pending	Completed	Pending	Completed	Funds Obligated	Funds Paid Out
Bare Land Planting .	33	27	766	761	17,688	17,346
Site Preparation and Planting	160	116	5,560	4,145	479,959	364,287
Timber Stand Improvement	5	3	155	102	5,270	4,414
Hardwood Natural Regeneration	2	1	65	20	2,535	780
TOTALS	200	147	6,546	5,028	505,452	386,827

Federal Programs

Forestry Incentive Program (FIP)

Agricultural Conservation Program (ACP)

These cost share programs are administered by the U.S. Department of Agricultural Conservation Stabilization and Conservation Service (ASCS). The Forestry Commission provides technical forestry assistance to landowners and approves qualifying acreage. The programs provide up to 50% reimbursement to carry out approved forestry practices for reforestation of woodlands or forest improvement practices.

Since 1974 \$10,098,940 have been allocated to South Carolina landowners under FIP. Through June 30, 1984, landowners have been paid \$8,869,985, with the balance obligated and held until practices are completed.

Agricultural Conservation Program (ACP) funds are available for landowners who may not qualify for costsharing under FIP guidelines.

1983-84 Forest Incentive Program (FIP) Accomplishments

<i>Practice</i>	<i>No. Referrals</i>	<i>Acres Completed</i>	<i>Cost Share Paid Out</i>
Bare Land Planting	142	4,328	\$106,397
Replanting	17	384	7,984
Site Preparation & Planting	258	8,117	753,397
Timber Stand Improvement	2	18	810
Natural Regeneration	1	4	156
Totals	420	12,851	\$868,744

1983-84 Agricultural Conservation Program (ACP) Accomplishments

<i>Practice</i>	<i>No. Referrals</i>	<i>Acres Completed</i>	<i>Cost Share Paid Out</i>
Bare Land Planting	154	2,644	\$ 65,301
Replanting	19	287	5,029
Site Preparation & Planting	94	1,294	105,449
Timber Stand Improvement	4	46	1,564
Totals	271	4,271	\$177,343

Special Seedling Program

One million pine seedlings were donated to South Carolina landowners by Union Camp Corporation for planting on private lands. Landowners ordered the Union Camp seedlings through the Forestry Commission and paid for them. After proper planting was certified by a Commission employee, landowners were reimbursed the cost of the seedlings. Forty-eight landowners participated in this program and 1,497 acres were planted.

Summary FIP Accomplishments, 1974-1984

Fiscal Year	Bare Land Planting			Site Preparation And Planting			Timber Stand Improvement			Prescribed Burning			Firebreak Construction			Allocation	Cost-Share Paid Out
	No. Cases	Acres	Dollars	No. Cases	Acres	Dollars	No. Cases	Acres	Dollars	No. Cases	Acres	Dollars	No. Cases	Feet	Dollars		
1973-74				MONEY NOT RECEIVED UNTIL APRIL 1, 1974. NO ACCOMPLISHMENTS COMPLETED												\$ 468,000	\$ 0
1974-75	82	1,848	30,397	212	5,941	335,862	12	291	3,480	10	887	666	18	186,225	984	629,000	371,689
1975-76	81	1,668	37,056	254	6,378	376,447	3	80	960	24	1,670	1,252	23	254,000	712	939,000	416,000
1976-77	105	2,354	46,657	305	8,786	537,439	5	118	1,416	9	682	512	12	98,675	238	1,087,940	586,262
1977-78	147	3,782	74,315	443	14,797	888,335	6	179	3,912	2	320	240	1	5,000	10	1,116,000	966,812
1978-79	123	3,338	65,002	422	15,592	1,095,012	2	55	1,650	Not Covered Under Program						1,040,000	1,095,379
1979-80	130	3,069	61,932	732	16,195	1,136,644	9	129	5,068							1,025,000	1,203,651
1980-81	212	5,577	123,933	590	19,534	1,540,638	13	526	22,705							862,000	1,684,156
1981-82	143	4,722	116,016	291	9,471	724,754	6	355	8,010							919,000	848,780
1982-83	106	3,122	73,531	285	7,947	739,861	6	336	15,120							1,040,000	828,512
1983-84	159	4,712	114,381	258	8,117	753,397	2	18	810							973,000	868,744
TOTALS	1,288	34,212	743,226	3,792	112,758	8,128,389	64	2,087	64,131	45	3,559	2,670	54	543,900	1,944	10,098,940	8,869,985

ANALYSIS OF APPLICATIONS BY TYPE OF PRACTICE FOREST RENEWAL PROGRAM

	Solid Planting			Spot Planting			Site Prep. & Planting			Natural Regeneration			Timber Stand Improvement			Total		
	#	Acres	\$	#	Acres	\$	#	Acres	\$	#	Acres	\$	#	Acres	\$	#	Acres	\$
	FUNDED																	
82-83	33	736	19,899				128	4,432	402,560				1	86	3,870	164*	5,361	431,144
83-84	31	766	16,836	2	56	852	160	5,560	479,959				5	155	5,270	200**	6,602	505,452
TOTAL	64	1,502	36,735	2	56	852	288	9,992	882,519				6	241	9,140	364	11,963	936,596
	UNFUNDED — 1983-84																	
	42	1,121	29,262	1	100	1,700	463	24,125	2,342,495				11	637	25,365	518	25,990	2,399,095
GRAND TOTAL	106	2,623	65,997	3	156	2,552	751	34,117	3,225,014				17	878	34,505	882	37,953	3,335,691
	PRACTICES COMPLETED AND PAID OUT																	
82-83	23	475	12,845				62	1,954	181,463							85	2,429	194,308
83-84	26	711	16,596	1	50	750	116	4,145	364,287				3	102	4,414	147	5,028	386,827
TOTAL	49	1,186	29,441	1	50	750	178	6,099	545,750				3	102	4,414	232	7,457	581,135

* Total landowners submitting applications for these practices — 153 (This # includes 1.o. cancelled at end of f.y. due to expiration date.)

** Total landowners submitting applications for these practices — 170

Total landowners funded to-date

323

Forest Services

Through this program the Commission provides landowners forestry services to assist in afforestation, reforestation, and to maximize production from their woodland. For these services the landowner is charged the cost of performing the service.

The following services were available to landowners during the year:

- Firebreak Plowing — performed by Forestry Commission employees using agency equipment for \$28 per mile.
- Prescribed Burning — performed by Forestry Commission employees using agency equipment for \$3 per acre.
- Prescribed Burning Standby — an agency unit and employee on standby at burning site while landowner performs burning under an approved plan for \$9 per hour.
- Equipment Rental Program — agency owned tree planters, bedding plows, drum chopper, and disc harrow made available to private landowners for use in reforestation at rates from \$3 to \$16 per acre.

Forest Services Accomplishments

<i>Service</i>	<i># Tracts</i>	<i>Miles-Acres</i>	<i>Receipts</i>
Firebreak Plowing	583	1,356 mi	\$49,283
Prescribed Burning	164	9,911 ac	29,473
Prescribed Burning Standby	25	2,432 ac	3,242
Equipment Rental	88	3,326 ac	20,833
Totals	860	1,536 mi 15,669 ac	\$102,831

Forest Products Utilization and Marketing

Pine Sawtimber and Pulpwood Prices

Sawtimber prices remained fairly stable, with a slight increase noted at the close of the fiscal year. Some pine sales were recorded over \$200 per thousand board feet. Most mills continued normal operation with some mills adding a second shift. Pulpwood prices remained fairly stable for the year.

Pine Sawtimber & Pulpwood Prices for South Carolina*

<i>Fiscal Year</i>	<i>Weighted Average Price Per Thousand Board Feet Scribner Tree Scale</i>	<i>Weighted Average Price Per Standard Cord</i>
1979-80	138.08	\$12.71
1980-81	117.76	13.58
1981-82	138.80	15.18
1982-83	141.51	16.03
1983-84	133.95	15.71

* Sales of timber marked by Commission Foresters on private property.

Commodity Drain

During the year information was gathered from all primary wood using industries for a commodity drain report. The report issued in 1983 for the calendar year 1982 showed 1,248,241,000 board feet and 3,226,265 cords of timber harvested in South Carolina.

Industry Assistance

The forestry commission continued to provide direct assistance to the wood using industries to "stretch" the state timber supply. These programs include logging and log yard analysis, sawmill improvement, roughmill improvement, improved drying techniques and wood energy.

Miscellaneous Assistance

Commission personnel handled over 160 miscellaneous utilization, marketing, and wood energy requests during the year.

Resource Conservation and Development

Lowcountry Resource Conservation and Development Project

The Lowcountry Resource Conservation and Development (RC&D) Project's forestry program was initiated during the 1967-68 fiscal year. RC&D is a federally assisted program sponsored by citizens of Beaufort, Berkeley, Charleston, Colleton, Dorchester, Hampton, and Jasper Counties. Federal, state, and local agencies along with industry and others work together on proposals these citizens consider important to the areas. The RC&D objective is to increase economic opportunities through the orderly development, conservation, and improvement of all resources including soil, water, wildlife, and woodlands.

One commission forester is assigned to work full time in this project area. He concentrates on utilization, marketing, environmental education

and all phases of forest management programs including urban forestry. The assistance to landowners accomplished by this forester is included in the forest management assistance figures located in this report.

This is the sixteenth and final year for the Lowcountry RC&D Forestry Program. For those sixteen years, the RC&D Forestry Committee has developed work plans that have made the Lowcountry RC&D Project a model for other projects in the nation.

Accomplishments for current year:

- Low cost Reforestation Workshop at Moncks Corner
- Shade Tree Care Workshop
- Timber Marketing Workshop
- Project Learning Tree Workshop
- Annual Woodland Clinic
- Developed tree service company list
- Assistance with Arbor Day celebrations
- Installation of two herbicide demonstration areas
- Monthly radio programs
- Television programs on Christmas Tree industry and investment opportunities in forestry
- Forestry Investment Workshop

Ninety Six District Resource Conservation and Development Project

The Ninety Six District Resource Conservation and Development (RC&D) Project consists of Abbeville, Edgefield, Greenwood, Laurens, McCormick and Saluda Counties. This project was initiated and sponsored by local citizens, and by federal, state, and local governments. Industry and others are working together on proposals that the local citizens consider necessary to develop a better way of life for the people in the area by conserving and developing the human and natural resources of the region.

The primary objective of this project is to assist landowners, local units of government, and other agencies by providing guidance in land use planning, promoting multiple use of the forest, and showing ways to increase production, provide more employment opportunities, and protect the forest from fire and erosion through control measures.

Accomplishments for the current year:

- Woodland clinic for vocational agriculture students
- Project Learning Tree for teachers
- Forest Taxation Workshops for landowners
- Assisted in development of County Forestry Association chapters
- Fuelwood marketing progress

- Forest Marketing Seminar
- Assisted with tornado disaster relief
- Christmas Tree survey
- Assisted with S. C. Forestry 4H Invitational
- Set up site preparation demonstrations in Greenwood and McCormick counties
- Set up portable sawmill demonstration at Greenwood
- Talks, radio, and television programs on RC&D projects

Watersheds

A program to help control water runoff on the small watersheds and to protect bottomlands along the smaller streams from overflow was initiated some years ago through Public Law 566. In previous years Forestry Commission personnel have provided needed forestry assistance under agreement with the US Forest Service on 36 watersheds. The forestry input into all watersheds under this program was completed in 1982. Preliminary surveys of new watersheds have been done but none of these potential watersheds have been activated. Forestry Commission personnel will continue to assist in these watershed reviews and provide technical assistance as needed.

Urban Forestry

Urban foresters work with private businesses, planners, governmental agencies, and the general public for the care, protection and wise use of our urban forests. The urban forester serves as the expert in planning and training for tree establishment and care including special programs such as Arbor Day.

Accomplishments for Urban Forestry Projects:

	Charleston	Columbia
Assists to individuals and agencies	581	348
Tree expert referrals	112	13
Woodland Examinations number	4	0
acres	101	0
Timber marking Assistance Mbf	48	0
cords	8	25
Media Contacts	12	3
Garden, Civic Club programs	23	13
Workshops, Arbor Day programs	1	8

Tree city USA recognition is a program of the National Arbor Day Foundation of Nebraska. It is an important promotor of Urban forestry

and has been well received in South Carolina. During the year nine cities were recognized. They are Cheraw, Columbia, Florence, Marion, Charleston, Spartanburg, Summerville, Greenville and Sumter. The cities received a walnut plaque, a Tree City USA flag and signs to place at city limits. The standards for recognition include: a legally constituted municipal tree body, a tree ordinance, a comprehensive community forestry program supported by a minimum of \$1 per capita, and an Arbor Day Observance.

FOREST FIRE PROTECTION SECTION

The South Carolina Forestry Commission is charged by state law with the responsibility of protecting all private and state owned woodland from wildfire. At present, there are 12,031,090 acres of woodland under protection. Additionally 548,724 acres of national forest lands are under the protection of the U. S. Forest Service with another 280,101 acres of woodland owned and protected by other federal agencies.

A formal agreement between the Forestry Commission and the U. S. Forest Service and other federal agencies provides for mutual aid in regard to fire detection and suppression along federal forest land boundaries.

Southeastern States

Forest Fire Compact Commission

In 1954 South Carolina joined with nine (9) other southeast states to form a Forest Fire Compact Commission. Other states are Alabama, Georgia, Florida, Kentucky, Mississippi, North Carolina, Tennessee, Virginia, and West Virginia. The membership of the Commission for each state is composed of a Compact Administrator (the state forester) and a four-member advisory committee. The Advisory Committee for this year was: Leonard A. Kilian, Jr., State Forester; Senator L. Marion Gressette, Calhoun County; Representative Marion P. Carnell, Greenwood County; and two members at large, Mr. Harold Lott of Blackville, and Mr. Archer Smith of Eastover.

The thirtieth annual meeting of the Southeastern States Forest Fire Compact Commission (SSFFCC) was held on May 7, 1984 at Panama City, Florida. Several working committees were established to improve the effectiveness of the Compact.

Southern States Fire Chiefs Meeting

The annual meeting of the Southern Fire Chiefs was held on May 8, 1984 at Panama City, Florida. Discussion topics were fireline safety, economic planning, National Interagency Incident Management System,

fire prevention, fire weather forecasting, communication, and mutual aid fire agreements with other federal agencies.

Disaster Preparedness Agency (Civil Defense)

The South Carolina Disaster Preparedness Agency was established to provide for Civil Defense and disaster control in the state. The Forestry Commission maintains contact with this agency and cooperates closely on matters concerning emergencies and natural disasters.

On March 28, 1984 a series of tornados crossed the state causing destruction to structures and timber from Abbeville to Marlboro counties. Newberry, Winnsboro, and Bennettsville experienced the greastest losses to structures and improvements.

The Forestry Commission responded immediately to this emergency by providing personnel and equipment to assist in the removal of debris and trees from buildings and roads. A total of 57 employees, 20 tractors, 30 transport trucks, 12 pickup trucks and 18 chain saws with operators assisted in this cleanup.

Rural Fire Protection

Fire Protection — Title IV

The Rural Development Act of 1972, Title IV (Public Law 92-419), as amended, authorized the Secretary of Agriculture to develop a Rural Community Fire Protection Program. This program applies to rural communities throughout the country and is established to provide financial and technical assistance for organizing, training, and equipping local fire fighting forces in communities under 10,000 population. Qualifying fire departments have been able to apply for funds under this program on a 50/50 matching basis. Funds may be utilized for fire hose, protective clothing, communications equipment, and breathing apparatus. Funding for the current year was set at \$47,000 and provided assistance to 82 departments.

Excess Equipment

Excess federal equipment, loaned to the Forestry Commission by the U. S. Forest Service, is provided to qualifying rural fire departments for conversion to useful pieces of fire fighting equipment. The department receiving this equipment agrees to paint, maintain, and insure it and to respond to calls by the Forestry Commission. All equipment is returned to the Forestry Commission when no longer needed by the department.

Since the Cooperative Rural Fire Program began in January of 1976, 301 vehicles and other miscellaneous tanks and spray equipment have been loaned to 207 rural fire departments in the state. At present 168

departments have in use 256 pieces of excess equipment. During this year 14 pieces of equipment were issued to qualifying fire departments.

Weather

Fire Weather Forecast

Since July 1965 regular and special fire weather forecasts have been available to the Forestry Commission, other agencies, and individuals through the National Weather Service.

Throughout the fire season, fire weather and smoke management forecasts are received twice daily by the Forestry Commission and relayed to all field offices and fire towers as well as other forestry interests. Special forecasts are available upon request for areas with large fires and during periods of extreme fire danger. During the summer months only the smoke management forecasts are given daily.

Weather Stations

A fire weather station is located in each district. The information from these stations is used in the National Fire Danger Rating System with this information also furnished daily to all fire control personnel. The weather stations also furnish special information to the Fire Weather Forecaster and information to assist in general forecasting.

Precipitation

Precipitation in the state during the year was 51.70 inches. This was 3.38 inches above the state's annual average of 48.32 inches.

Average precipitation by months

<i>Month</i>	<i>Rainfall (inches)</i>	<i>Normal (inches)</i>	<i>Departure from Normal (inches)</i>
July 1983	3.43	5.90	-2.47
August 1983	2.81	5.18	-2.37
September 1983	3.56	4.37	-.81
October 1983	2.04	2.88	-.84
November 1983	4.56	2.65	+1.91
December 1983	6.55	3.49	+3.06
January 1984	4.24	3.53	+.71
February 1984	5.39	3.78	+1.61
March 1984	5.42	4.84	+.58
April 1984	4.74	3.56	+1.18
May 1984	6.53	3.55	+2.98
June 1984	2.43	4.59	-2.16
Total	51.70	48.32	+3.38

Five-year summary of precipitation

<i>Year</i>	<i>Rainfall (Inches)</i>	<i>Departure from Normal (Inches)</i>
1979-80	59.03	+ 10.71
1980-81	41.30	- 7.02
1981-82	56.74	+ 8.42
1982-83	51.69	+ 3.37
1983-84	<u>51.70</u>	<u>+ 3.38</u>
Average	52.09	+ 3.77

Readiness Plan

Initiated in the fall of 1982, the Readiness Plan System considers the influence of weather and fuel conditions on fire behavior, the chance of a fire starting, and the capability of the fire control organization at any given time. Readiness plans give guidance in work planning and fire control activities. This allows the Commission to perform all of its many functions while at the same time meet its fire control responsibilities. Readiness Plans are on a scale of 1 to 7 with 1 being the lowest state of readiness and 7 the highest.

Readiness Days 1983-84

Number of Readiness 1 Days —	81
Number of Readiness 2 Days —	169
Number of Readiness 3 Days —	81
Number of Readiness 4 Days —	33
Number of Readiness 5 Days —	2
Number of Readiness 6 Days —	0
Number of Readiness 7 Days —	0

Smoke Management

In the spring of 1980, Voluntary Smoke Management Guidelines for Forestry Prescribed Burning Operations were adopted. This statewide program was developed by a committee of the S. C. Forestry Association in cooperation with the Forestry Commission.

The objective of the program is to minimize particulate concentrations of smoke in smoke sensitive areas resulting from forestry prescribed burning operations by defining those days and volumes of vegetative debris that may be burned.

During this fourth year of the program, 1,598 prescribed burns on 214,270 acres were carried out under the Voluntary Smoke Management Guidelines.

Legal Fires

Legal fires are fires which are authorized by the landowner, and burn entirely on his land. Individual landowners reported 5,001 fires that burned an estimated 513,020 acres for various purposes during 1983-84.

Summary of Legal Fires

District	Hazard Reduction Hardwood Control		Wildlife Improvement		Grazing		Site Preparation		Total	
	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres
Camden	211	28,860	55	12,964	138	11,538	50	5,476	454	58,838
Florence	193	14,590	13	2,052	1	3	48	3,997	255	20,642
Kingstree	605	83,870	160	56,249	137	1,651	161	12,183	1,063	153,953
Newberry	125	14,217	19	1,267	2	35	183	15,173	329	30,692
Orangeburg	467	33,716	51	816	—	—	123	7,790	641	42,322
Spartanburg	12	438	—	—	—	—	5	1,999	17	2,437
Walterboro	1,226	139,106	455	44,655	325	7,258	236	13,117	2,242	204,136
Total	2,839	314,797	753	118,003	603	20,485	806	59,735	5,001	513,020

Law Enforcement

The Forestry Commission has 94 Forest Law Enforcement Officers. They are commissioned by the Forestry Commission under statute authority of the 1982 General Assembly. The Forest Law Enforcement Officer has statewide jurisdiction for the enforcement of forestry laws of the state and the duly enacted regulations of the Commission. All officers are trained by the Criminal Justice Academy prior to being commissioned and in-service training is given annually to keep officers up-to-date on changes that occur. In carrying out its law enforcement responsibilities, the Forestry Commission works closely with other state and local law enforcement agencies.

Summons Law

The use of a Summons by Forest Law Enforcement Officers has been very beneficial to the Forestry Commission in carrying out the law enforcement during the year. A special official summons was authorized for use in 1982.

LAW ENFORCEMENT INFORMATION **Fiscal Year 1983-84**

	Camden	Florence	Kingsree	Newberry	Orangeburg	Spartanburg	Walterboro	State Total
PART A. NO. OF VIOLATIONS								
1. Willful and Malicious	18	6	12	8	25	23	12	104
2. Intentional	179	382	986	45	348	27	850	2,817
3. Careless and Negligent	237	256	295	202	302	226	248	1,766
4. Other Violations	2	0	0	0	0	0	0	2
5. Total Violations (1-4)	436	644	1,293	255	675	276	1,110	4,689
6. Notification Violation	36	13	21	7	33	2	28	140
7. Total All Violations (5 & 6)	472	657	1,314	262	708	278	1,138	4,829
8. No Fire Law Violations	114	357	38	269	214	160	105	1,257
PART B. NO. OF PROSECUTIONS								
1. Willful and Malicious	—	—	—	—	2	—	—	2
2. Intentional	—	—	1	—	2	—	—	3
3. Careless & Negligent	—	10	9	3	7	5	6	40
4. Notification Law	—	7	6	1	3	3	4	24
5. Other Violations	—	1	—	—	1	—	—	2
6. Total	—	18	16	4	15	8	10	71
PART C. NO. OF CONVICTIONS								
1. Willful and Malicious	—	—	—	—	—	—	—	—
2. Intentional	—	—	1	—	2	—	—	3
3. Careless and Negligent	—	10	9	3	7	4	6	39
4. Notification Law	—	6	6	1	2	1	4	20
5. Other Violations	—	1	—	—	1	—	—	2
6. Total	—	17	16	4	12	5	10	64

Burning Notification Law

In 1969 a Notification of Intent to Burn Law for the state was enacted. This law repealed Burning Permit Laws in eight counties and burning notification laws in twenty-six counties which had been passed on a county by county basis. The State Forester may direct that fires covered under the Notification Act not be started when deemed necessary in the interest of public safety. Burning Notifications totaled 63,676 during 1983-84.

ANNUAL BURNING NOTIFICATION SUMMARY
Fiscal Year 1983-84

<i>County</i>	<i>Number Notifications Received</i>	<i>Number Fires Escaped</i>	<i>Number Technical Violations</i>	<i>Number Prosecutions</i>	<i>Number Convictions</i>
Abbeville	820	5	4	—	—
Aiken	6,161	—	—	—	—
Allendale	414	—	—	—	—
Anderson	763	—	—	—	—
Bamberg	571	—	—	—	—
Barnwell	1,614	—	—	—	—
Beaufort	3,997	—	—	—	—
Berkeley	2,068	1	3	3	3
Calhoun	515	—	—	—	—
Charleston	1,568	—	—	—	—
Cherokee	826	—	—	—	—
Chester	338	5	—	—	—
Chesterfield	1,248	6	5	—	—
Clarendon	1,200	8	9	2	2
Colleton	3,965	—	—	—	—
Darlington	363	1	—	—	—
Dillon	465	4	—	2	2
Dorchester	1,172	—	—	—	—
Edgefield	313	3	—	—	—
Fairfield	1,985	21	1	—	—
Florence	668	—	—	—	—
Georgetown	2,025	13	29	8	8
Greenville	2,750	—	—	—	—
Greenwood	1,312	2	2	—	—
Hampton	1,701	—	—	—	—
Horry	1,251	11	—	12	12
Jasper	1,000	—	—	—	—
Kershaw	2,357	—	—	—	—
Lancaster	281	3	26	—	—
Laurens	1,114	3	3	3	3
Lee	203	4	28	—	—
Lexington	5,409	—	—	—	—
McCormick	191	2	—	1	1
Marion	547	2	—	2	2
Marlboro	560	5	2	2	1
Newberry	873	3	—	—	—
Oconee	1,659	—	—	—	—
Orangeburg	1,235	—	—	—	—
Pickens	826	—	—	—	—
Richland	1,191	2	—	—	—
Saluda	265	—	—	—	—
Spartanburg	903	—	—	—	—
Sumter	1,459	12	89	—	—
Union	92	—	—	—	—
Williamsburg	1,234	7	3	3	3
York	2,204	—	—	—	—
Totals	63,676	123	204	38	37

Fire Detection

Fire Towers

Basic forest fire detection is accomplished by the interlocking network of 131 forest fire lookout towers. These towers are strategically located so each tower's normal range of visibility overlaps with adjoining towers. With overlapping coverage, smokes and suspected wildfires can be observed, located and checked out.

Aerial Detection

Forestry Commission aircraft are used to separate legal burning from wildfires, to help ground crews find the best path to a fire, to warn of danger, aid in fire suppression, and other uses.

During 1983-84 the Commission operated six federal excess property aircraft which were flown a total of 650 hours. Contract aircraft were utilized for 112 hours during the same period. Total aircraft use for the year was 762 hours.

SUMMARY OF AIRCRAFT USE — 1983-84

Month	Camden Hours	Florence Hours	Kingstree Hours	Newberry Hours	Orangeburg Hours	Spartanburg Hours	Walterboro Hours	Total Hours
July	22.6	—	2.6	—	2.5	6.1	1.9	35.7
August	15.5	12.0	11.1	9.4	19.0	78.5	20.5	166.0
September	.5	7.1	—	—	5.1	.3	3.0	16.0
October	3.0	3.8	20.5	—	17.0	2.0	13.8	60.1
November	—	2.2	6.0	—	2.4	1.7	3.0	15.3
December	.9	—	3.4	—	2.6	3.2	3.2	13.3
January	9.8	1.7	4.4	—	—	—	19.7	34.7
February	12.6	11.8	46.9	—	16.8	1.6	46.9	136.6
March	27.9	34.7	49.1	2.7	38.1	24.4	45.9	222.8
April	12.5	1.5	—	1.2	9.1	5.0	3.6	32.9
May	8.7	2.0	—	—	2.7	1.5	3.0	17.9
June	6.8	—	—	—	—	4.3	—	11.1
Total	120.8	76.8	143.7	13.3	115.3	128.6	163.9	762.4

Aerial Retardant Delivery

Air Tanker Program

The primary purpose of air tankers is to aid ground crews in the initial attack of wildfires. They are also used in areas of difficult terrain such as coastal swamps/bays and steep mountain slopes where the use of ground equipment is limited. Air tankers cannot replace ground equipment, but because of their capability to respond wherever needed quickly, they can keep a fire from spreading until ground crews arrive and complete control.

The Forestry Commission has used air tankers for retardant delivery on wildfires for the past six years. In all years, tankers were contracted for the peak fire occurrence time in February, March and April.

Two aerial tankers were used for the spring fire season. Tanker 101, a Lockheed PV-2, was stationed at Walterboro February 22 through April 6, 1984. Tanker 42, a Grumman F7, was stationed at Georgetown February 24 through April 11, 1984. Satellite bases were set up at Florence, Camden, and Barnwell. A mobile base was located at Spartanburg.

Aerial delivery of retardants has proven to be a very effective program especially in high value stands where the potential for loss is great.

Helicopter Delivery Program

In September 1982 the Forestry Commission and the South Carolina Army National Guard completed a week of training in the use of helicopters for aerial retardant delivery. Training was given to the Guard in fire behavior, fire tactics, communications, and retardant drops. Using a 250 gallon bucket furnished by the Forestry Commission, practice runs were made on fires set for the training exercise. Training was conducted in October 1983 to keep pilots proficient in the use of the aerial bucket.

To activate this program for wildfire control, the State Forester must request assistance from the Governor through the Office of Emergency Preparedness.

Forest Fire Suppression

During fiscal year 1983-84 South Carolina recorded 6,086 wildfires and 26,650.5 acres burned including both forest and non-forest land. Fires on forest land totaled 5,137 burning 23,378.4 acres. Non-forest land fires, such as fields, pastures, rights of way, etc., totaled 949 with 3,272.1 acres burned.

The fire season was spread fairly evenly over the entire year. Above average rainfall for November through May with no extended dry periods were primarily responsible for below average losses.

During the year a total of 4,048 fires were detected by fire towers. Landowners and cooperating citizens reported an additional 2,038 fires to the Forestry Commission. Personnel also checked 3,072 false alarms during the year. A false alarm is a check on a suspected forest fire that ultimately does not require suppression action.

The leading cause of wildfires in order of importance were:

- Incendiary 51%
- Debris Burning 24%
- Smoking 9%

PROTECTION PERSONNEL
Fiscal Year 1983-84

	<i>Organized Personnel</i>				<i>Volunteer Personnel</i>	<i>Grand Total</i>
	<i>Rangers</i>	<i>Wardens</i>	<i>Tower Operators</i>	<i>Totals</i>		
Abbeville	1	3	1	5	85	90
Aiken	1	5	5	11	57	68
Allendale	1	3	3	7	20	27
Anderson	1	3	2	6	163	169
Bamberg	1	3	2	6	146	152
Barnwell	1	4	2	7	43	50
Beaufort	1	5	3	9	162	171
Berkeley	1	7	4	12	182	194
Calhoun	1	3	2	6	54	60
Charleston	1	6	3	10	207	217
Cherokee	1	2	1	4	406	410
Chester	1	3	1	5	90	95
Chesterfield	1	4	4	9	160	169
Clarendon	1	5	3	9	110	119
Colleton	1	7	5	13	152	165
Darlington	1	3	3	7	147	154
Dillon	1	3	2	6	39	45
Dorchester	1	6	3	10	50	60
Edgefield	1	3	1	5	33	38
Fairfield	1	4	3	8	143	151
Florence	1	5	4	10	161	171
Georgetown	1	5	4	10	339	349
Greenville	1	4	4	9	152	161
Greenwood	1	3	2	6	108	114
Hampton	1	4	3	8	43	51
Horry	1	8	4	13	221	234
Jasper	1	6	2	9	365	374
Kershaw	1	6	5	13	126	139
Lancaster	1	4	2	7	71	78
Laurens	1	3	2	6	172	178
Lee	1	3	2	6	17	23
Lexington	1	6	5	12	86	98
Marion	1	5	3	9	112	121
Marlboro	1	4	3	8	146	154
McCormick	1	2	2	5	29	34

PROTECTION PERSONNEL
Fiscal Year 1983-84

	Organized Personnel				Volunteer Personnel	Grand Total
	Rangers	Wardens	Tower Operators	Totals		
Newberry	1	3	2	6	120	126
Oconee	1	2	2	5	49	54
Orangeburg	1	7	5	13	162	175
Pickens	1	4	4	9	102	111
Richland	1	6	4	11	144	155
Saluda	1	2	1	4	21	25
Spartanburg	1	4	2	7	158	165
Sumter	1	4	3	8	105	113
Union	1	3	1	5	55	60
Williamsburg	1	8	4	13	212	225
York	1	4	3	8	214	222
Total	46	197	131	375	5,939	6,314

FISCAL YEAR 1983-84

County	Lightning		Campfire		Smoking		Debris Burning		Incendary		Equipment Use		Railroad		Children		Misc.		Total	
	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres
Abbeville	—	—	—	—	1	1.5	7	12.2	1	.4	5	8.0	4	25.7	3	8.6	—	—	21	56.4
Aiken	26	485.7	3	.7	3	3.3	24	86.8	88	300.5	4	29.5	2	1.4	11	7.7	5	2.6	166	918.2
Allendale	—	—	3	.8	3	1.7	22	181.4	20	80.5	1	.4	2	4.0	—	—	1	.2	52	269.0
Anderson	1	2.0	2	49.6	10	48.5	12	42.5	6	13.3	4	5.5	—	—	9	15.8	1	13.0	45	190.2
Bamberg	—	—	—	—	5	10.3	21	61.1	29	53.3	2	5.3	—	—	6	6.7	1	1.0	64	137.7
Barnwell	—	—	—	—	6	19.9	12	33.3	11	45.7	2	6.0	1	15.0	2	1.5	1	.3	35	121.7
Beaufort	1	8.0	—	—	2	17.9	23	86.8	43	150.0	4	137.9	—	—	—	—	1	.4	74	401.0
Berkeley	—	—	—	—	—	—	41	161.2	314	2,110.6	3	4.5	1	.5	—	—	1	5.0	360	2,281.8
Calhoun	2	7.2	—	—	14	27.9	13	32.6	4	12.1	2	6.1	—	—	1	.4	2	.5	38	86.8
Charleston	—	—	1	1.0	19	47.2	12	36.2	51	210.5	—	—	—	—	10	26.2	1	12.0	94	333.1
Cherokee	2	2.5	1	4.0	21	37.8	12	13.8	6	10.5	1	4.0	7	10.2	4	14.6	2	6.0	56	103.4
Chester	2	13.0	2	3.0	8	25.9	6	70.0	5	3.2	3	5.7	1	17.5	3	18.9	5	20.6	35	177.8
Chesterfield	2	25.0	1	.8	18	60.8	21	50.2	37	167.4	6	7.4	2	5.8	—	—	8	17.1	95	334.5
Clarendon	—	—	—	—	28	67.9	51	333.3	193	1,074.5	3	4.2	1	3.0	1	2.5	2	3.0	279	1,488.4
Colleton	4	170.0	—	—	6	16.2	53	450.8	230	1,358.5	11	23.6	—	—	3	2.4	6	8.2	313	2,029.7
Darlington	8	92.8	1	.5	6	53.3	35	59.3	16	66.9	9	71.7	—	—	7	7.8	9	8.7	91	361.0
Dillon	2	2.3	1	2.1	13	36.9	45	54.5	22	64.0	5	9.1	—	—	7	26.8	8	9.0	103	204.7
Dorchester	—	—	—	—	23	60.4	33	126.7	114	647.5	2	83.0	—	—	3	5.5	—	—	175	923.1
Edgefield	2	11.2	—	—	17	36.9	6	17.1	—	—	4	1.2	—	—	1	.2	3	5.3	33	71.9
Fairfield	5	68.2	1	.5	23	32.1	24	298.2	14	45.9	5	44.6	—	—	5	7.5	3	10.5	80	507.5
Florence	1	10.0	—	—	11	8.1	42	91.0	107	600.0	5	3.9	3	13.3	9	8.1	6	17.8	184	742.2
Georgetown	3	61.4	—	—	1	.1	64	1,040.0	149	707.6	9	31.1	—	—	1	.1	—	—	227	1,840.3
Greenville	5	78.0	—	—	6	43.2	15	21.8	5	17.9	5	12.9	—	—	5	3.3	3	40.1	44	217.2
Greenwood	2	49.0	1	5.0	11	44.8	19	33.7	8	14.1	5	10.3	10	35.0	9	2.2	4	.5	69	194.6
Hampton	1	10.0	—	—	4	6.3	18	118.4	61	154.2	1	.3	—	—	—	—	2	2.8	87	292.0
Horry	2	.2	1	6.0	16	33.1	93	209.5	109	397.0	16	16.2	—	—	19	25.5	11	60.8	267	748.3
Jasper	—	—	—	—	1	270.0	23	275.3	188	903.9	5	15.8	2	14.0	—	—	—	—	219	1,479.0
Kershaw	25	269.5	—	—	24	131.1	16	72.5	14	22.8	3	113.8	—	—	4	11.4	—	—	86	621.1
Lancaster	1	10.0	—	—	2	6.0	10	15.2	10	68.4	4	3.8	1	5.0	5	13.0	7	5.4	40	126.8
Laurens	1	24.0	1	.3	33	105.5	9	48.2	13	36.1	5	3.3	3	2.5	3	4.4	4	4.2	72	228.5
Lee	3	72.0	—	—	1	.2	26	108.3	13	143.3	—	—	—	—	—	—	1	3.0	44	326.8
Lexington	12	24.9	3	8.7	23	26.5	76	97.8	69	368.3	13	30.3	3	23.5	17	24.3	4	6.1	220	610.4
Marion	2	.7	1	40.1	7	6.0	14	11.0	18	41.3	2	.2	—	—	3	2.7	3	3.5	50	105.5
Marlboro	1	21.0	—	—	12	19.7	44	90.7	105	412.3	3	11.4	—	—	9	8.1	2	11.0	176	574.2
McCormick	2	56.2	—	—	3	1.9	10	13.7	3	12.4	1	.5	3	.4	3	.3	4	10.1	29	95.5
Newberry	9	11.6	—	—	2	.2	22	17.5	—	—	1	2.5	1	.5	3	4.3	5	1.5	43	38.1
Oconee	—	—	3	4.8	7	31.1	6	31.5	8	75.1	2	12.1	—	—	3	.9	3	5.0	32	160.5
Orangeburg	5	122.9	3	19.0	14	54.6	79	245.2	101	467.8	7	7.2	1	2.0	8	16.1	8	5.9	226	940.7
Pickens	3	24.0	1	.4	4	24.2	11	15.5	2	.4	5	2.4	1	1.5	5	7.6	1	.1	33	76.1
Richland	—	—	2	2.5	12	14.7	34	76.5	62	211.6	8	31.0	4	9.1	25	38.4	8	10.1	155	393.9
Saluda	2	16.5	—	—	4	48.1	3	15.6	1	1.5	—	—	—	—	2	1.3	1	2.0	13	85.0
Spartanburg	—	—	1	3.0	8	37.0	6	26.0	2	.9	1	3.0	—	—	2	2.0	3	11.0	23	82.9
Sumter	1	.6	1	4.0	1	1.0	21	44.9	45	333.0	—	—	3	7.0	7	15.8	17	70.0	96	476.3
Union	1	.3	—	—	9	28.0	6	27.1	—	—	2	25.3	4	21.0	—	—	2	6.0	24	107.7
Williamsburg	5	9.8	—	—	1	.1	74	702.0	306	1,032.8	13	9.6	—	—	4	.8	1	.5	404	1,755.6
York	1	.1	2	2.1	6	8.3	31	30.3	10	3.1	4	8.7	2	.3	4	6.8	5	1.6	65	61.3
TOTAL	145	1,760.6	36	158.9	449	1,556.2	1,245	5,687.2	2,613	12,441.1	196	813.3	62	208.2	226	350.5	165	402.4	5,137	23,378.4

FISCAL YEAR 1983-84

County	Lightning		Campfire		Smoking		Debris Burning		Incendary		Equipment Use		Railroad		Children		Misc.		Total	
	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres
Abbeville	—	—	—	—	1	2.0	5	9.6	—	—	3	1.8	2	4.3	2	1.0	1	2.5	14	21.2
Aiken	1	2.5	—	—	1	.6	6	45.6	8	7.8	4	4.7	—	—	3	4.0	2	.2	25	65.4
Allendale	—	—	—	—	2	2.2	—	—	—	—	5	.9	1	.4	—	—	—	—	8	3.5
Anderson	—	—	—	—	2	28.0	2	14.0	2	25.2	1	12.0	—	—	1	3.3	3	60.0	11	142.5
Bamberg	—	—	—	—	—	—	7	21.2	1	.5	1	.2	1	.1	1	3.0	—	—	11	25.0
Barnwell	—	—	—	—	3	22.0	2	10.0	2	11.0	1	2.0	—	—	3	5.0	4	16.6	15	66.6
Beaufort	—	—	—	—	—	.3	23	70.3	21	321.0	—	2.0	—	—	—	—	—	—	44	393.6
Berkeley	—	—	—	—	—	—	3	6.0	11	72.6	—	—	—	—	1	.2	—	—	15	78.8
Calhoun	—	—	—	—	6	4.4	6	5.9	—	—	6	13.9	—	—	—	—	—	—	18	24.2
Charleston	—	—	2	13.0	2	29.0	2	6.3	4	31.2	—	—	—	—	2	6.1	—	—	12	85.6
Cherokee	1	1.0	—	—	5	2.0	21	25.0	5	7.4	—	—	—	—	3	2.4	—	—	35	37.8
Chester	—	—	—	—	1	.3	5	120.1	1	.5	1	7.0	4	.7	1	.8	1	1.0	14	130.4
Chesterfield	2	4.6	—	—	5	6.1	11	20.9	3	.6	3	6.7	—	—	3	3.1	—	—	27	42.0
Clarendon	—	—	—	—	19	9.3	7	20.7	23	167.1	—	—	—	—	2	7.0	—	—	51	204.1
Colleton	—	—	—	—	6	6.1	22	101.9	49	256.7	4	2.5	—	—	3	5.5	3	.5	87	373.2
Darlington	1	.5	—	—	3	.6	8	9.2	1	.1	8	2.5	—	—	3	8.4	2	1.7	26	23.0
Dillon	—	—	—	—	19	9.2	12	14.3	2	.2	7	3.7	1	.1	18	7.1	—	—	59	34.6
Dorchester	—	—	—	—	11	27.5	9	51.5	35	126.8	1	.5	—	—	1	2.2	1	9.0	58	217.5
Edgefield	—	—	—	—	2	9.6	3	9.1	—	—	—	—	—	—	—	—	1	.4	6	19.1
Fairfield	1	.3	1	.1	5	3.4	5	8.0	1	.1	4	14.4	—	—	1	7.2	1	.5	19	34.0
Florence	—	—	—	—	7	8.1	2	3.6	1	.1	—	—	1	4.0	—	—	—	—	11	15.8
Georgetown	—	—	—	—	1	.2	4	3.2	1	11.0	1	5.1	—	—	2	.2	—	—	9	19.7
Greenville	—	—	—	—	1	1.0	6	11.7	2	.2	2	4.5	—	—	2	17.1	2	3.8	15	38.3
Greenwood	1	3.6	—	—	1	1.5	2	.2	—	—	2	.2	1	1.0	—	—	—	—	7	6.5
Hampton	—	—	—	—	2	1.6	4	7.3	14	24.5	7	2.2	1	.1	—	—	3	1.1	31	36.8
Horry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Jasper	—	—	—	—	5	2.2	7	52.1	30	84.2	6	17.2	1	.4	—	—	—	—	49	156.1
Kershaw	1	2.0	—	—	1	1.5	3	8.3	—	—	2	26.6	—	—	—	—	—	—	7	38.4
Lancaster	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Laurens	—	—	—	—	20	18.5	17	41.6	1	35.0	10	61.4	6	2.9	1	2.0	3	35.7	58	197.1
Lee	—	—	—	—	1	3.0	4	41.2	—	—	—	—	—	—	—	—	—	—	5	44.2
Lexington	—	—	—	—	2	7.0	1	2.8	1	14.6	—	—	—	—	1	.3	—	4.0	5	28.7
Marion	—	—	1	.2	4	9.2	10	62.0	6	3.4	2	2.1	—	—	3	3.4	2	1.1	28	81.4
Marlboro	—	—	—	—	4	2.6	7	35.6	2	1.0	—	—	—	—	3	2.0	4	1.1	20	42.3
McCormick	1	.8	—	—	1	.3	3	1.4	—	—	1	.1	2	.3	1	.5	—	—	9	3.4
Newberry	1	8.0	—	—	3	2.4	1	.2	—	—	—	—	—	—	1	.2	—	—	6	10.8
Oconee	—	—	—	—	—	—	2	2.0	1	.2	1	5.5	—	—	2	7.0	1	5.5	7	20.2
Orangeburg	1	1.6	1	.1	8	19.8	16	80.3	8	56.0	2	1.9	—	—	2	3.5	1	10.0	39	173.2
Pickens	1	.2	—	—	4	18.3	5	8.6	—	—	1	.2	1	.5	—	—	3	3.5	15	31.3
Richland	—	—	—	—	—	2.0	4	28.5	—	—	—	—	—	—	—	—	—	—	4	30.5
Saluda	—	—	—	—	2	8.5	1	10.1	—	—	—	—	—	—	—	.5	—	—	3	19.1
Spartanburg	—	—	—	—	4	13.0	7	34.0	—	—	—	—	1	.1	—	—	1	3.0	13	50.1
Sumter	—	—	—	—	—	—	2	19.0	4	71.0	—	—	1	1.0	2	15.0	17	50.5	26	156.5
Union	—	—	—	—	4	11.7	1	1.0	—	—	—	—	—	—	—	—	—	—	5	12.7
Williamsburg	—	—	—	—	—	—	5	6.8	1	6.0	1	2.0	—	—	—	—	—	—	7	14.8
York	—	—	—	—	3	2.1	1	3.1	—	.2	7	12.5	—	—	3	4.0	2	.2	16	22.1
TOTAL	12	25.1	5	13.4	171	297.1	274	1,034.2	241	1,336.2	94	216.3	24	15.9	71	122.0	58	211.9	950	3,272.1

County	Class A		Class B		Class C		Class D		Class E		Class F		Class G		Total	
	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres
Abbeville	3	0.6	17	45.8	1	10.0	0	0.0	0	0.0	0	0.0	0	0.0	21	56.4
Aiken	47	6.8	101	205.5	17	359.9	0	0.0	1	346.0	0	0.0	0	0.0	166	918.2
Allendale	12	1.8	33	87.2	7	180.0	0	0.0	0	0.0	0	0.0	0	0.0	52	269.0
Anderson	0	0.0	42	90.3	3	99.9	0	0.0	0	0.0	0	0.0	0	0.0	45	190.2
Bamberg	20	2.9	42	100.8	2	34.0	0	0.0	0	0.0	0	0.0	0	0.0	64	137.7
Barnwell	7	1.1	24	57.6	4	63.0	0	0.0	0	0.0	0	0.0	0	0.0	35	121.7
Beaufort	10	1.3	58	137.7	5	107.0	1	155.0	0	0.0	0	0.0	0	0.0	74	401.0
Berkeley	19	2.3	289	646.3	50	1,390.2	2	243.0	0	0.0	0	0.0	0	0.0	360	2,281.8
Calhoun	12	1.6	25	70.2	1	15.0	0	0.0	0	0.0	0	0.0	0	0.0	38	86.8
Charleston	5	0.7	77	189.4	12	143.0	0	0.0	0	0.0	0	0.0	0	0.0	94	333.1
Cherokee	14	2.8	41	90.6	1	10.0	0	0.0	0	0.0	0	0.0	0	0.0	56	103.4
Chester	5	0.8	25	65.5	5	84.5	0	27.0	0	0.0	0	0.0	0	0.0	35	177.8
Chesterfield	18	2.6	69	152.4	8	179.5	0	0.0	0	0.0	0	0.0	0	0.0	95	334.5
Clarendon	35	3.7	208	536.7	34	721.0	2	227.0	0	0.0	0	0.0	0	0.0	279	1,488.4
Colleton	54	8.0	208	563.7	50	1,270.0	1	188.0	0	0.0	0	0.0	0	0.0	313	2,029.7
Darlington	17	3.1	64	113.9	10	244.0	0	0.0	0	0.0	0	0.0	0	0.0	91	361.0
Dillon	40	5.2	59	119.0	4	80.5	0	0.0	0	0.0	0	0.0	0	0.0	103	204.7
Dorchester	6	1.1	146	439.0	23	483.0	0	0.0	0	0.0	0	0.0	0	0.0	175	923.1
Edgefield	13	1.6	17	42.3	3	28.0	0	0.0	0	0.0	0	0.0	0	0.0	33	71.9
Fairfield	22	3.0	46	85.5	11	314.0	1	105.0	0	0.0	0	0.0	0	0.0	80	507.5
Florence	30	4.2	134	294.2	20	443.8	0	0.0	0	0.0	0	0.0	0	0.0	184	742.2
Georgetown	58	6.9	143	307.4	24	583.0	1	120.0	1	823.0	0	0.0	0	0.0	227	1,840.3
Greenville	12	1.5	24	54.4	8	161.3	0	0.0	0	0.0	0	0.0	0	0.0	44	217.2
Greenwood	28	3.2	37	87.4	4	104.0	0	0.0	0	0.0	0	0.0	0	0.0	69	194.6
Hampton	23	3.0	56	103.0	8	186.0	0	0.0	0	0.0	0	0.0	0	0.0	87	292.0
Horry	64	8.9	186	378.4	17	361.0	0	0.0	0	0.0	0	0.0	0	0.0	267	748.3
Jasper	31	4.1	157	416.9	29	708.0	2	350.0	0	0.0	0	0.0	0	0.0	219	1,479.0
Kershaw	18	2.4	51	126.2	16	385.5	1	107.0	0	0.0	0	0.0	0	0.0	86	621.1
Lancaster	6	0.9	31	55.9	3	70.0	0	0.0	0	0.0	0	0.0	0	0.0	40	126.8
Laurens	26	3.1	39	68.0	7	157.4	0	0.0	0	0.0	0	0.0	0	0.0	72	228.5
Lee	1	0.2	36	99.4	7	227.2	0	0.0	0	0.0	0	0.0	0	0.0	44	326.8
Lexington	86	10.6	121	190.8	12	199.0	1	210.0	0	0.0	0	0.0	0	0.0	220	610.4
Marion	21	3.0	27	37.5	2	65.0	0	0.0	0	0.0	0	0.0	0	0.0	50	105.5
Marlboro	47	7.1	118	236.1	10	231.0	1	100.0	0	0.0	0	0.0	0	0.0	176	574.2
McCormick	13	1.6	14	27.9	2	66.0	0	0.0	0	0.0	0	0.0	0	0.0	29	95.5
Newberry	20	2.9	23	35.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	43	38.1
Oconee	4	0.7	22	67.2	6	92.6	0	0.0	0	0.0	0	0.0	0	0.0	32	160.5
Orangeburg	47	6.5	158	436.2	21	498.0	0	0.0	0	0.0	0	0.0	0	0.0	226	940.7
Pickens	8	1.1	23	33.0	2	42.0	0	0.0	0	0.0	0	0.0	0	0.0	33	76.1
Richland	18	2.5	133	306.4	4	85.0	0	0.0	0	0.0	0	0.0	0	0.0	155	393.9
Saluda	2	0.2	7	7.8	4	77.0	0	0.0	0	0.0	0	0.0	0	0.0	13	85.0
Spartanburg	0	0.0	22	72.9	1	10.0	0	0.0	0	0.0	0	0.0	0	0.0	23	82.9
Sumter	5	0.9	77	200.4	14	275.0	0	0.0	0	0.0	0	0.0	0	0.0	96	476.3
Union	1	0.1	19	40.6	4	67.0	0	0.0	0	0.0	0	0.0	0	0.0	24	107.7
Williamsburg	120	13.6	246	577.0	36	748.0	2	417.0	0	0.0	0	0.0	0	0.0	404	1,755.6
York	25	3.7	40	57.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	65	61.3
TOTAL	1,073	143.9	3,535	8,157.2	512	11,659.3	15	2,249.0	2	1,169.0	0	0.0	0	0.0	5,137	23,378.4

CLASS A FIRE=25 acres or less CLASS B FIRE=26-9.9 acres CLASS C FIRE=10 to 99.9 acres CLASS D FIRE=100 to 299.9 acres

CLASS E FIRE=300 to 999.9 acres CLASS F FIRE=1,000 to 4,999.9 CLASS G FIRE=5,000 or more acres

FOREST LAND FIRES BY COUNTY AND MONTH

FISCAL YEAR 1983-84

County	July		August		September		October		November		December		January		February		March		April		May		June		Total	
	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres
Abbeville	1	1.0	3	2.5	1	.2	1	10.2	2	1.4	1	.7	1	2.0	1	9.0	3	8.8	2	6.9	1	3.2	4	10.5	21	56.4
Aiken	33	173.6	13	361.5	8	12.8	15	14.0	6	6.6	5	16.5	8	40.0	12	24.3	26	129.4	17	49.6	8	33.5	15	56.4	166	918.2
Allendale	—	—	3	48.4	1	1.0	5	44.6	—	—	3	2.7	10	9.0	14	116.2	10	36.7	—	—	3	3.5	3	6.9	52	269.0
Anderson	7	39.0	11	22.3	3	12.5	2	7.0	2	3.0	2	.8	4	10.0	4	9.5	4	13.0	2	7.0	—	—	4	66.1	45	190.2
Bamberg	1	.5	2	4.1	1	1.0	3	4.5	2	3.8	4	1.2	6	20.7	27	54.6	9	34.1	2	5.5	5	.7	2	7.0	64	137.7
Barnwell	1	.5	3	4.2	1	12.0	2	6.0	2	25.0	—	—	—	—	7	22.0	15	49.3	2	1.7	—	—	2	1.0	35	121.7
Beaufort	1	8.0	—	—	1	1.5	1	2.1	1	20.5	2	2.5	9	17.9	25	84.7	20	87.5	4	5.3	6	151.0	4	20.0	74	401.0
Berkeley	7	14.5	22	323.5	5	10.6	30	110.1	10	56.0	10	39.5	58	275.5	126	709.7	54	296.1	22	106.8	8	40.0	8	299.5	360	2,281.8
Calhoun	4	1.0	2	7.4	—	1.0	—	—	1	4.0	—	—	1	1.1	16	31.9	6	27.0	1	.3	1	.1	6	13.0	38	86.8
Charleston	4	25.0	2	30.0	1	6.0	4	4.1	1	8.0	2	4.6	17	38.7	26	79.7	23	73.7	5	20.3	5	23.0	4	20.0	94	333.1
Cherokee	4	3.6	9	13.5	7	7.4	4	5.0	3	5.2	1	2.0	2	4.6	11	29.6	7	18.3	4	8.4	1	5.0	3	.8	56	103.4
Chester	1	2.7	8	53.7	4	55.5	9	7.3	1	2.5	—	—	2	4.0	3	6.6	4	20.0	—	—	—	—	3	25.5	35	177.8
Chesterfield	9	26.6	15	20.3	3	19.8	6	11.2	4	1.2	2	3.0	5	18.9	15	112.1	16	47.9	9	32.4	6	23.9	5	17.2	95	334.5
Clarendon	—	—	10	113.6	4	8.6	10	11.7	5	6.3	8	25.5	39	132.9	93	438.6	75	618.7	14	50.9	9	27.5	12	54.1	279	1,488.4
Colleton	6	10.0	9	120.9	18	83.1	35	106.7	8	10.2	5	20.5	29	159.6	97	492.4	59	444.0	16	193.8	10	73.3	21	315.2	313	2,029.7
Darlington	5	86.3	12	36.8	16	93.6	5	2.6	2	4.8	1	1.0	2	.7	7	26.7	19	86.0	4	3.0	5	9.0	13	10.5	91	361.0
Dillon	1	2.0	11	34.5	6	10.3	6	3.5	1	2.1	1	.4	6	4.4	19	59.4	17	27.7	6	20.6	6	6.9	23	32.9	103	204.7
Dorchester	2	6.0	5	12.5	10	68.8	8	57.5	8	92.0	9	45.0	17	125.0	56	257.1	41	201.6	8	42.5	7	9.5	4	5.5	175	923.1
Edgefield	6	20.1	3	10.6	1	10.0	1	.1	—	—	—	—	3	8.2	6	8.6	3	4.7	2	1.1	2	.3	6	8.2	33	71.9
Fairfield	7	18.1	31	301.7	8	9.0	7	71.3	1	.4	—	—	2	24.5	3	2.1	12	65.1	3	5.8	3	8.8	3	.7	80	507.5
Florence	1	.5	9	6.4	18	95.1	19	41.1	4	10.4	2	3.6	3	3.7	43	95.0	56	277.2	11	34.0	5	60.9	13	114.3	184	742.2
Georgetown	8	87.4	14	13.7	10	142.4	13	850.9	11	41.9	6	21.4	26	175.0	38	125.8	62	302.1	12	36.6	10	9.7	17	33.4	227	1,840.3
Greenville	5	18.2	6	64.6	—	—	2	2	25.1	—	—	—	4	12.8	6	8.0	11	58.3	5	26.5	2	1.5	1	2.0	44	217.2
Greenwood	5	50.4	5	9.6	2	.3	5	45.1	5	6.3	3	.3	3	1.3	9	5.5	10	13.7	8	26.7	6	33.2	8	22	69	194.6
Hampton	—	—	4	1.0	1	10.0	2	2.7	3	3.8	—	—	6	8.8	46	101.0	15	113.0	4	5.8	3	9.7	3	36.2	87	292.0
Horry	7	5.3	16	48.1	16	42.3	38	82.1	6	9.5	7	4.2	14	30.2	57	179.4	50	210.6	9	10.9	14	17.1	33	108.6	267	748.3
Jasper	3	42.0	12	291.6	5	12.1	5	27.0	5	3.3	11	34.8	45	253.5	69	418.9	46	294.7	12	93.5	4	6.3	2	1.3	219	1,479.0
Kershaw	18	121.3	12	129.0	3	2.7	1	1.0	—	—	.4	—	4	16.6	18	47.6	15	260.1	5	19.4	4	5.7	6	17.3	86	621.1
Lancaster	5	11.5	10	20.5	4	7.0	2	6.0	2	1.1	2	.8	2	1.8	5	7.6	2	55.0	5	15.3	—	—	1	.2	40	126.8
Laurens	7	28.4	5	11.7	4	4.1	7	32.9	2	31.0	1	.1	6	13.3	8	9.4	9	14.7	13	48.7	6	24.7	4	9.5	72	228.5
Lee	2	62.0	4	35.5	6	34.5	2	2.3	—	—	1	.3	1	.2	11	132.5	5	24.0	—	—	2	5.5	10	30.0	44	326.8
Lexington	40	79.8	27	15.7	7	3.5	8	12.0	2	1.3	2	10.5	27	38.8	23	53.3	29	317.3	17	43.7	10	6.4	28	28.1	220	610.4
Marion	—	—	9	4.4	5	5.7	6	3.3	3	.3	1	40.0	3	2.9	3	5.7	7	29.1	—	1.0	5	3.2	8	9.9	50	105.5
Marlboro	13	67.8	30	127.1	5	16.4	8	5.1	2	9.0	7	5.0	10	104.9	42	129.6	44	100.7	6	3.7	2	1.4	7	3.5	176	574.2
McCormick	5	6.6	9	66.3	2	5.2	—	—	1	.2	—	—	—	—	5	2.1	2	10.1	1	4.0	2	.3	2	.7	29	95.5
Newberry	11	15.7	10	5.5	2	1.0	—	—	1	.2	1	3.2	2	3.0	—	—	8	2.6	2	.5	2	2.2	4	4.2	43	38.1
Oconee	5	11.9	7	54.0	—	—	—	—	—	—	—	—	3	1.9	3	15.0	8	63.8	2	8.0	2	2.1	2	3.8	32	160.5
Orangeburg	19	164.9	7	22.3	6	16.4	5	2.4	11	28.7	6	5.6	15	47.8	80	376.3	46	228.4	14	19.6	4	4.8	13	23.5	226	940.7
Pickens	9	44.9	4	10.0	—	—	—	—	—	—	1	.1	3	1.7	1	3.0	11	12.9	—	—	1	.5	3	3.0	33	76.1
Richland	11	16.5	20	31.9	11	16.1	8	16.8	—	—	6	14.0	9	35.7	30	84.8	37	156.7	4	3.8	7	7.7	12	9.9	155	393.9
Saluda	3	2.2	2	16.5	—	—	—	—	1	1.5	—	—	1	1.0	—	—	1	15.0	—	—	2	1.3	3	47.5	13	85.0
Spartanburg	2	3.5	3	13.4	1	8.0	—	—	—	—	—	—	3	9.0	3	12.0	5	11.0	4	19.0	1	4.0	1	3.0	23	82.9
Sumter	8	25.4	2	1.6	9	45.0	4	8.0	1	.5	3	3.5	6	50.0	22	58.8	29	247.8	4	13.0	2	4.0	6	18.7	96	476.3
Union	3	.9	3	4.3	1	25.0	2	11.0	1	1.0	—	—	—	—	—	—	6	42.0	1	3.0	2	10.0	5	10.5	24	107.7
Williamsburg	5	157.9	24	26.4	28	110.8	22	69.7	7	18.8	15	50.6	57	210.4	126	329.7	95	707.4	13	26.2	6	24.7	6	23.0	404	1,755.6
York	6	10.8	17	20.0	7	5.0	7	5.1	2	.6	—	.2	3	2.2	2	2.2	10	6.9	6	4.2	1	.2	4	3.9	65	61.3
TOTAL	301	1,474.3	445	2,573.1	252	1,033.4	320	1,704.2	132	447.5	131	364.5	477	1,924.2	1,218	4,778.0	1,042	5,864.7	281	1,029.0	191	666.3	347	1,519.2	5,137	23,378.4

**FOREST LAND FIRES BY CAUSE
FISCAL YEAR 1983-84**

<i>Causes</i>	<i>Number of Fires</i>	<i>Percent of Total Number</i>	<i>Area Burned (Acres)</i>	<i>Average Area Per Fire (Acres)</i>
Lightning	145	2.82	1,760.6	12.1
Campfire	36	.70	158.9	4.4
Smoking	449	8.74	1,556.2	3.5
Debris Burning	1,245	24.23	5,687.2	4.6
Incendiary	2,613	50.86	12,441.1	4.8
Equipment Use	196	3.81	813.3	4.1
Railroad	62	1.20	208.2	3.4
Children	226	4.39	350.5	1.6
Miscellaneous	165	3.21	402.4	2.4
TOTALS	5,137	100.00	23,378.4	4.6

**FOREST LAND FIRES BY CAUSE — FIVE YEAR PERIOD
(Percent of Total)**

<i>Causes</i>	<i>1979-80</i>	<i>1980-81</i>	<i>1981-82</i>	<i>1982-83</i>	<i>1983-84</i>
Lightning	1.0	1.2	1.2	1.2	2.8
Campfire	0.8	0.5	0.9	0.6	0.7
Smoking	14.8	9.9	11.3	8.3	8.8
Debris Burning	25.6	21.0	24.3	24.5	24.2
Incendiary	34.4	51.6	45.7	46.7	50.9
Equipment Use	5.5	3.4	5.4	5.1	3.8
Railroad	5.0	4.0	2.5	4.5	1.2
Children	8.7	4.9	4.5	5.7	4.4
Miscellaneous	4.2	3.5	4.2	3.4	3.2

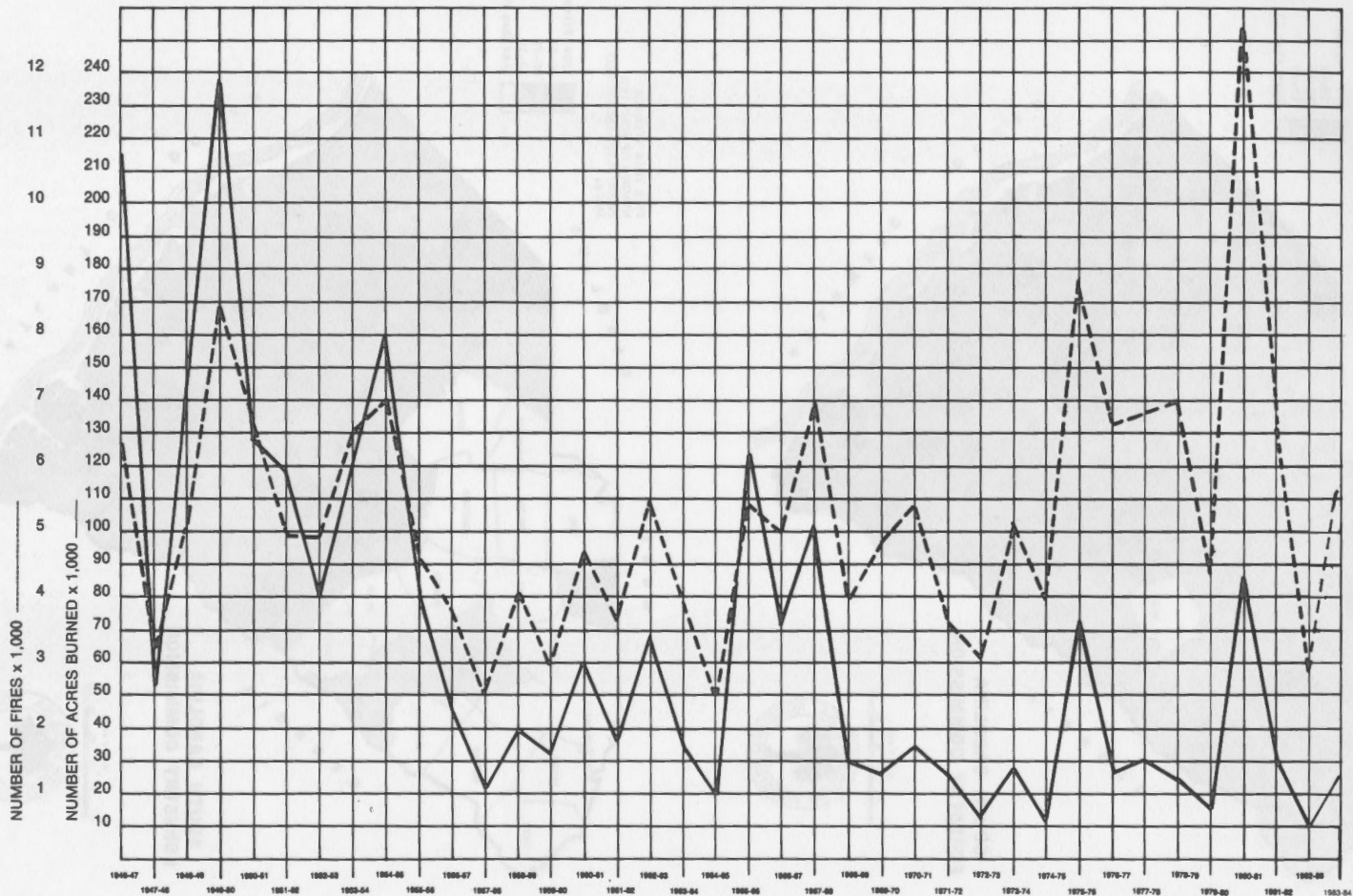
FOREST AND NON-FOREST LAND FIRES 1953-54

Unit	FOREST LAND					NON-FOREST LAND		TOTAL ALL LAND	
	Forest Area Protected (Acres)	Number of Fires	Area Burned (Acres)	Percent Area Burned	Average Area Per Fire (Acres)	Number of Fires	Area Burned (Acres)	Number of Fires	Area Burned (Acres)
Abbeville	205,619	21	56.4	.02	2.7	14	21.2	35	77.6
Aiken	433,387	166	918.2	.21	5.5	25	65.4	191	983.6
Allendale	156,223	52	269.0	.17	5.2	8	3.5	60	272.5
Anderson	227,594	45	190.2	.08	4.2	11	142.5	56	332.7
Bamberg	149,603	64	137.7	.09	2.2	11	25.0	75	162.7
Barnwell	123,617	35	121.7	.09	3.5	15	66.6	50	188.3
Beaufort	153,166	74	401.0	.26	5.4	44	393.6	118	794.6
Berkeley	391,789	360	2,281.8	.58	6.3	15	78.8	375	2,360.6
Calhoun	134,105	38	86.8	.06	2.3	18	24.2	56	111.0
Charleston	262,798	94	333.1	.12	3.5	12	85.6	106	418.7
Cherokee	162,976	56	103.4	.06	1.8	35	37.8	91	141.2
Chester	283,949	35	177.8	.06	5.1	14	130.4	49	308.2
Chesterfield	355,398	95	334.5	.09	3.5	27	42.0	122	376.5
Clarendon	217,876	279	1,488.4	.68	5.3	51	204.1	330	1,692.5
Colleton	479,853	313	2,029.7	.42	6.5	87	373.2	400	2,402.9
Darlington	171,141	91	361.0	.21	4.0	26	23.0	117	384.0
Dillon	145,574	103	204.7	.14	2.0	59	34.6	162	239.3
Dorchester	273,472	175	923.1	.33	5.3	58	217.5	233	1,140.6
Edgefield	208,660	33	71.9	.03	2.2	6	19.1	39	91.0
Fairfield	378,650	80	507.5	.13	6.3	19	34.0	99	541.5
Florence	291,159	184	742.2	.25	4.0	11	15.8	195	758.0
Georgetown	381,198	227	1,840.3	.48	8.1	9	19.7	236	1,860.0
Greenville	315,925	44	217.2	.06	4.9	15	38.3	59	255.5
Greenwood	201,795	69	194.6	.09	2.8	7	6.5	76	201.1
Hampton	247,779	87	292.0	.11	3.4	31	36.8	118	328.8
Horry	496,547	267	748.3	.15	2.8	—	—	267	748.3
Jasper	317,032	219	1,479.0	.46	6.8	49	156.1	268	1,635.1
Kershaw	403,461	86	621.1	.15	7.2	7	38.4	93	659.5
Lancaster	242,709	40	126.8	.05	3.2	—	—	40	126.8
Laurens	294,516	72	228.5	.07	3.2	58	197.1	130	425.6
Lee	122,845	44	326.8	.26	7.4	5	44.2	49	371.0
Lexington	284,158	220	610.4	.21	2.8	5	28.7	225	639.1
Marion	217,136	50	105.5	.04	2.1	28	81.4	78	186.9
Marlboro	175,333	176	574.2	.32	3.3	20	42.3	196	616.5
McCormick	134,484	29	95.5	.07	3.3	9	3.4	38	98.9
Newberry	262,111	43	38.1	.01	0.9	6	10.8	49	48.9
Oconee	215,041	32	160.5	.07	5.0	7	20.2	39	180.7
Orangeburg	376,278	226	940.7	.25	4.2	39	173.2	265	1,113.9
Pickens	228,839	33	76.1	.03	2.3	14	31.3	47	109.4
Richland	288,854	155	393.9	.13	2.5	4	30.5	159	424.4
Saluda	194,122	13	85.0	.04	6.5	3	19.1	16	104.1
Spartanburg	292,516	23	82.9	.02	3.6	13	50.1	36	133.0
Sumter	240,153	96	476.3	.19	5.0	26	156.5	122	632.8
Union	220,583	24	107.7	.04	4.5	5	12.7	29	120.4
Williamsburg	392,392	404	1,755.6	.44	4.3	7	14.8	411	1,770.4
York	278,674	65	61.3	.02	0.9	16	22.1	81	83.4
Total	12,031,090	5,137	23,378.4	.19	4.6	949	3,272.1	6,086	26,650.5

FIVE YEAR SUMMARY — FIRE STATISTICS

Fiscal Year	FOREST LAND					NON-FOREST		ALL LANDS	
	Total Area Protected	Number Forest Land Fires	Acres Forest Land Burned	Forest Land % Area Burned	Average Acres Per Forest Fire	Number Non-Forest Fires	Acres Non-Forest Burned	Total No. All Lands Fires	Total Acres
1979-80	12,050,000	4,293	15,483.2	.13	3.6	527	2,156.2	4,820	17,639.4
1980-81	12,031,090	12,734	89,431.1	.79	6.6	1,671	5,477.9	14,405	94,909.0
1981-82	12,031,090	6,459	28,868.8	.27	4.5	1,290	3,840.8	7,334	32,709.6
1982-83	12,031,090	2,572	7,825.1	.06	3.0	588	1,325.4	3,160	9,150.5
1983-84	12,031,090	5,137	23,378.4	.19	4.6	949	3,272.1	6,086	26,650.5
Five Year Average	12,034,872	6,239	32,997.3	.29	4.5	1,005	3,214.5	7,161	36,211.8

FOREST LAND FIRES AND ACREAGE BURNED IN SOUTH CAROLINA 1946-1984

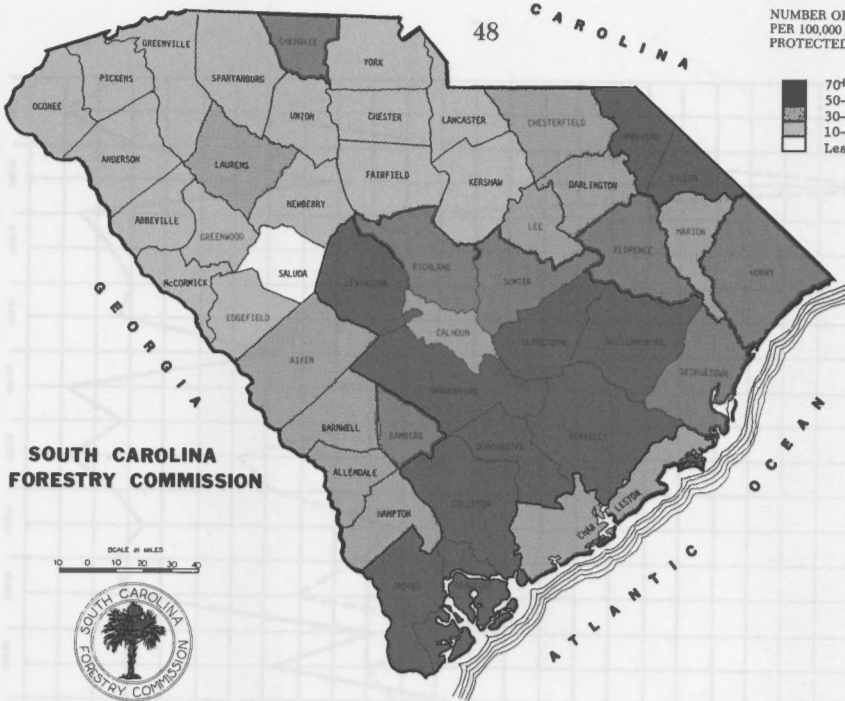
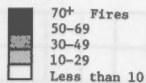


NORTH

48

CAROLINA

NUMBER OF FIRES
PER 100,000 ACRES
PROTECTED 1983-84



**SOUTH CAROLINA
FORESTRY COMMISSION**

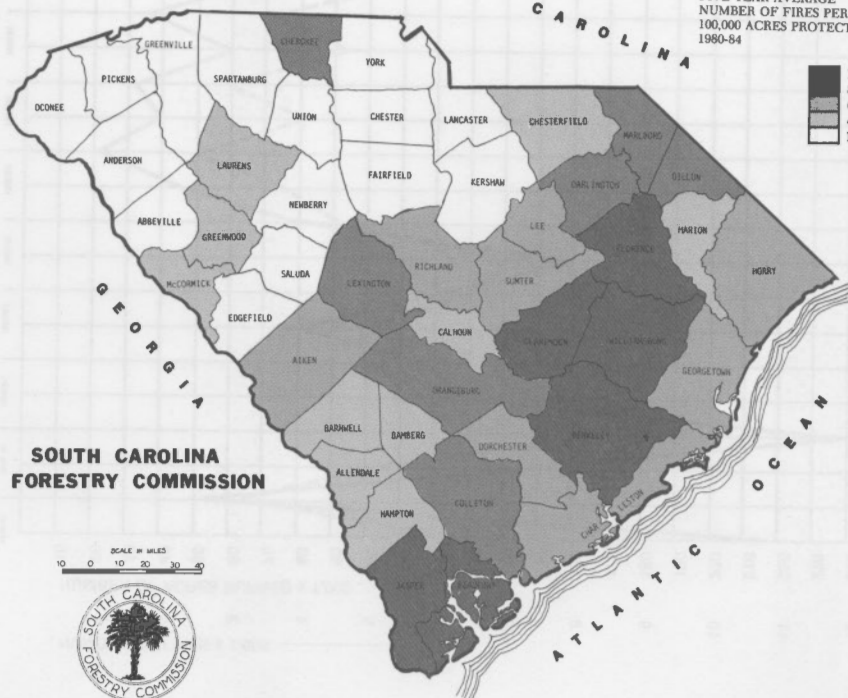
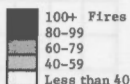
SCALE IN MILES
10 0 10 20 30 40



NORTH

CAROLINA

FIVE YEAR AVERAGE
NUMBER OF FIRES PER
100,000 ACRES PROTECTED
1980-84



**SOUTH CAROLINA
FORESTRY COMMISSION**

SCALE IN MILES
10 0 10 20 30 40

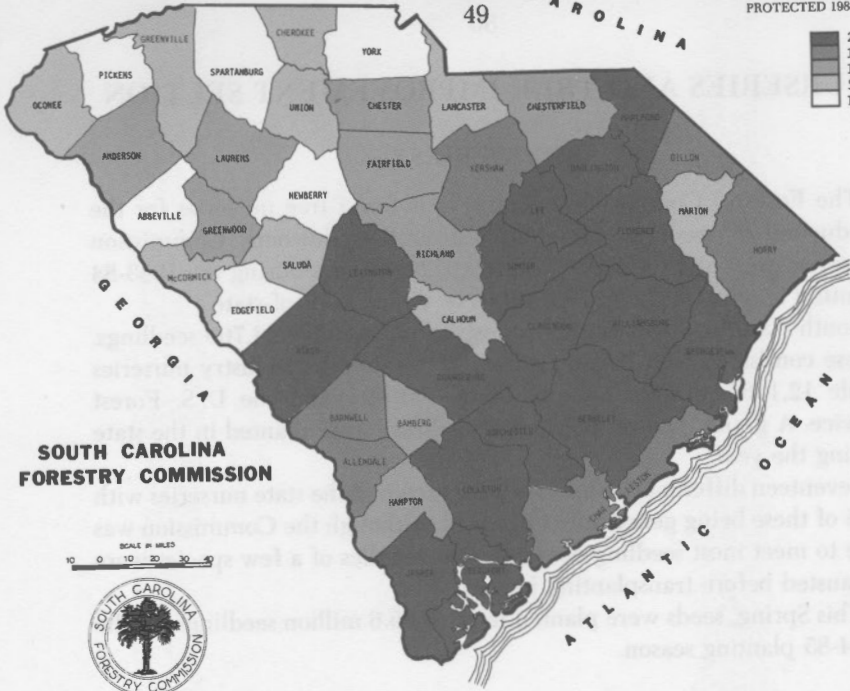
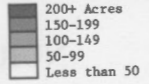


NORTH

49

CAROLINA

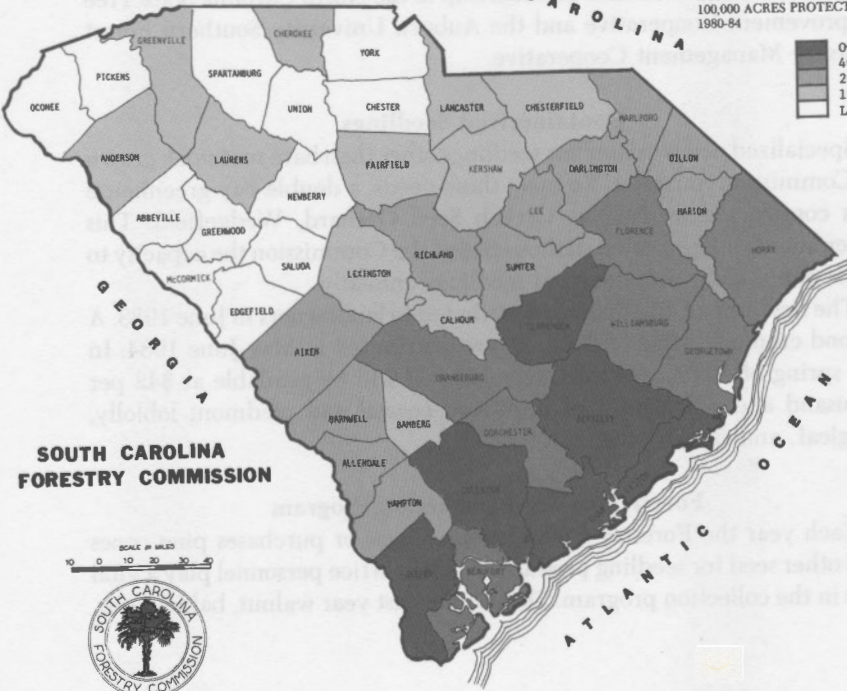
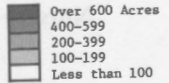
ACRES BURNED
PER 100,000 ACRES
PROTECTED 1983-84



NORTH

CAROLINA

FIVE YEAR AVERAGE
ACRES BURNED PER
100,000 ACRES PROTECTED
1980-84



NURSERIES AND TREE IMPROVEMENT SECTION

NURSERIES

The Forestry Commission operates four forest tree nurseries for the production of seedlings for South Carolina landowners. Commission nurseries grew and distributed 50,169,612 seedlings during the 1983-84 planting season. Of these, 763,700 were shipped out-of-state.

South Carolina's wood using industries planted 50,224,700 seedlings. These consisted of 38,068,200 grown in the state by industry nurseries while 12,156,500 were brought in by industry and the U. S. Forest Service. A grand total of 99,630,612 seedlings were planted in the state during the year.

Seventeen different tree species were grown at the state nurseries with 87% of these being genetically improved. Although the Commission was able to meet most seedling demands, the supplies of a few species were exhausted before transplanting began.

This Spring, seeds were planted to grow 66.6 million seedlings for the 1984-85 planting season.

Research

The Forestry Commission continues cooperative research projects with Clemson University, Auburn University and the U. S. Forest Service. The Commission also maintains membership in the North Carolina State Tree Improvement Cooperative and the Auburn University Southern Forest Nursery Management Cooperative.

Containerized Seedlings

Specialized needs existed for seedlings other than bare root stock grown at Commission nurseries. To meet these needs, a double bay greenhouse was constructed in 1982 at Creech Seed Orchard, Wedgefield. This greenhouse and associated slathouses give the Commission the capacity to grow one million containerized seedlings annually.

The first crop of 130,000 was distributed to landowners in June 1983. A second crop consisting of 305,000 was distributed in May-June 1984. In the spring of 1985, approximately 740,000 will be available at \$42 per thousand and will consist of improved coastal and piedmont loblolly, longleaf, and spruce pine.

Forest Tree Seed Collection Program

Each year the Forestry Commission collects or purchases pine cones and other seed for seedling production. Field office personnel play a vital role in the collection program. During the past year walnut, baldcypress,

redcedar, yellow poplar, green ash, table mountain pine, improved virginia pine, and loblolly pine were purchased.

Catawba Timber Company donated 613 pounds of genetically improved piedmont loblolly pine and 1,096 pounds of loblolly seed from their seed production area.

Yields from Commission seed orchards in 1983-84 were as follows:

	<i>Bushels of Cones</i>	<i>Pounds Yielded</i>
Improved Coastal Loblolly	611	1,293
Improved Coastal Loblolly (disease resistant)	12	4
Improved Piedmont Loblolly	582	1,130
Improved Piedmont Loblolly (disease resistant)	41	65
Improved South Carolina Slash	792	754
Improved Georgia Slash	593	305
Improved Longleaf	72	56
Improved Coastal Loblolly (1.5 generation)	17	12
Grand Totals	2,720	3,619

It is anticipated that the loblolly seed will produce 20,032,000 seedlings which will be available to South Carolina landowners in the 1984-85 planting season.

Forest Tree Improvement Program

A forest tree improvement program was begun in 1963 by the Forestry Commission to provide genetically improved seed for all loblolly, slash, and longleaf pine seedlings grown in Commission nurseries. This program was expanded in December 1983 with the acquisition of 1,594 acres of land near Tillman in Jasper County. This site, named for C. H. Niederhof, current Forestry Commission Chairman, will be the location of the Commission's second and third generation operational orchards.

Seed Orchards

Creech Seed Orchard — Wedgefield

Coastal Loblolly	31	acres
Coastal Loblolly (disease resistant)	5	acres
Piedmont Loblolly	40	acres
Piedmont Loblolly (disease resistant)	5	acres
Slash — South Carolina origin	21	acres

Slash — Georgia origin	22	acres
Longleaf	12	acres
Arizona Cypress	1.25	acres
Creed Seed Orchard — Manchester State Forest		
Coastal Loblolly — Second Generation	10.2	acres
Piedmont Loblolly — Second Generation	13.4	acres
Green Savannah Seed Orchard — Manning		
Coastal Loblolly — 1.5 Generation	39	acres
Niederhof Seed Orchard — Tillman		
Coastal Loblolly — Second Generation	1.8	acres
Piedmont Loblolly — Second Generation	5.4	acres
Total	207.05	acres

Clone Banks

Coastal Loblolly — New Plantation Selections	2.2	acres
Piedmont Loblolly — New Plantation Selections	5.8	acres
Total	8.0	acres

The Niederhof orchard is targeted for a 140 acre expansion in 1985.

Payment to Jasper County of 25% of timber sales receipts in lieu of taxes from Niederhof Orchard was \$4,062.50.

An accelerated breeding program is also underway to determine what parent trees will be best suited for the third generation orchard.

Progeny Tests

Present progeny plantings remain at 299.8 acres. Measurements of first generation progeny reaching 4, 8 and 12 years of age continue. Data from these measurements will be used to identify superior trees that will be used in future orchards. Selections made to date include 40 piedmont loblolly, 14 coastal loblolly, 11 slash (Georgia origin) and 5 slash (South Carolina origin). These trees will be used in the second generation seed orchards.

Seedling Production by Species

Commission Nurseries

Improved Coastal Loblolly	14,434,000
Regular Coastal Loblolly	6,850,000
Improved Piedmont Loblolly	27,798,000
Regular Piedmont Loblolly	2,463,000
Longleaf	1,466,000
Improved Slash Pine	170,000
Improved Virginia Pine	935,000
Shortleaf	125,000
White Pine (1-0)	827,000
White Pine (2-0)	753,000
Pitch Pine	48,000
Sand Pine	15,000
Leyland Cypress	6,000
Baldcypress	45,000
Arizona Cypress	30,000
Redcedar	369,000
Green Ash	27,000
Yellow Poplar	135,000
Improved Sycamore	18,000
Sweetgum	3,000
Black Walnut	43,000
Crepe Myrtle	1,800
Dogwood	600
Eastern Redbud	400
TOTAL	56,562,800

Containerized Seedling Production

Improved Coastal Loblolly	290,000
Sand Pine	15,000
	305,000*

* Production shown in above Table

TREE SEEDLING DISTRIBUTION
BY
LANDOWNER CLASSIFICATION
1983-84

A. *State Nursery Seedlings Planted in the State:*

<i>Land Ownership</i>	<i>Percent of Total</i>	<i>No. Trees Planted</i>
Farmers	15.4	7,615,550
Other Individuals	28.1	13,871,600
Associations and Clubs	1.9	936,500
Lumber Companies7	356,500
Pulp & Paper Companies	33.5	16,543,810
Other Industry	9.4	4,652,300
Schools1	27,000
State Forests9	447,500
Other State Lands	1.2	611,200
City, Town, Government1	29,000
Federal Government	6.7	3,314,000
Christmas Tree Growers	2.0	1,000,952
	<u>100.0</u>	<u>49,405,912</u>

B. *Seedlings From Other Sources Planted in the State:*

1. *Nurseries in South Carolina*

Champion International	3,953,000
International Paper Company	10,916,000
Westvaco	23,199,200
	<u>38,068,200</u>

2. *Nurseries Outside South Carolina*

Continental Forest Industries	122,000
Federal Paper Board	195,000
Florida Forest Service	50,000
Hiwassee Land Company	6,078,000
North Carolina Forest Service	265,000
U. S. Forest Service	774,000
Union Camp	4,001,500
Weyerhaeuser	671,000
	<u>12,156,500</u>

Total Other Seedlings	50,224,700
TOTAL SEEDLINGS PLANTED IN THE STATE	<u>99,630,612</u>

C. *State Nursery Seedlings Shipped Out of State* 763,700

CUMULATIVE TREE PLANTING RECORD — ALL SOURCES

<i>County</i>	<i>Seedlings Planted 1983-84</i>	<i>Grand Total Planted To Date 1929-84</i>	<i>Acres Planted 1929 Thru 6/30/84</i>
Abbeville	2,761,000	45,113,187	51,849
Aiken	3,624,000	178,918,653	189,920
Allendale	1,834,550	65,616,722	71,445
Anderson	823,300	39,939,742	42,802
Bamberg	1,157,000	35,760,009	38,807
Barnwell	4,328,000	96,401,726	104,656
Beaufort	1,717,950	21,522,645	24,854
Berkeley	3,947,750	84,848,131	98,757
Calhoun	1,886,500	24,699,620	28,024
Charleston	1,893,500	27,354,585	33,938
Cherokee	1,698,600	24,780,679	27,631
Chester	3,026,500	60,228,189	92,298
Chesterfield	2,391,100	110,311,365	119,319
Clarendon	1,787,950	42,497,915	48,690
Colleton	5,736,660	85,689,509	112,348
Darlington	795,200	26,988,295	30,903
Dillon	677,500	17,429,240	19,875
Dorchester	3,037,700	51,300,557	59,456
Edgefield	1,788,800	47,603,108	55,720
Fairfield	4,184,750	66,542,147	77,129
Florence	871,200	20,033,231	23,959
Georgetown	4,861,050	95,425,850	111,899
Greenville	990,550	24,035,104	25,933
Greenwood	2,845,250	60,337,721	61,130
Hampton	2,177,700	72,247,102	82,296
Horry	2,266,100	54,372,359	62,498
Jasper	3,485,700	67,081,777	76,919
Kershaw	2,055,500	149,260,395	161,166
Lancaster	2,011,700	52,551,540	60,293
Laurens	2,186,300	70,354,765	78,738
Lee	406,700	19,633,514	21,430
Lexington	1,461,525	50,021,497	53,741
Marion	1,336,250	24,253,705	27,854
Marlboro	816,500	40,718,158	45,771
McCormick	939,000	32,631,175	39,185
Newberry	1,890,600	54,623,222	63,927
Oconee	910,500	27,791,623	30,371
Orangeburg	3,492,127	85,308,331	96,843
Pickens	813,700	22,296,875	24,293
Richland	2,800,100	54,672,750	60,643
Saluda	1,479,600	29,321,551	35,720
Spartanburg	1,752,200	48,501,824	52,292
Sumter	673,950	54,337,067	58,101
Union	1,826,700	55,052,703	62,659
Williamsburg	4,834,800	57,972,489	70,107
York	1,347,000	46,768,946	50,966
TOTAL	99,630,612	2,523,151,298	2,867,155
Out-of-State	763,700	73,248,441	—
GRAND TOTAL	100,394,312	2,596,399,739	2,867,155

**SEEDLING DISTRIBUTION FROM STATE NURSERIES AND
OTHER SOURCE BY COUNTIES, SPECIES AND AMOUNTS
1983-84**

County	Improved Coastal Loblolly	Regular Coastal Loblolly	Improved Piedmont Loblolly	Regular Piedmont Loblolly	Slash	Longleaf	Yellow Poplar
Abbeville			2,722,500	10,000		2,000	6,000
Aiken	13,500	101,500	2,630,800	586,000	4,500	160,000	1,500
Allendale	1,241,000	387,000	149,000			37,000	
Anderson			709,500	35,000	2,000	500	2,500
Bamberg	676,500	282,500	189,000				5,000
Barnwell	1,429,000	188,500	1,387,500	1,093,000	3,000	143,000	500
Beaufort	1,049,000	502,000	94,000		1,000	4,500	3,500
Berkeley	3,361,300	557,950			1,000	7,000	
Calhoun	927,500	813,000	72,500		1,000	45,000	2,000
Charleston	1,566,300	195,100				90,500	500
Cherokee			1,664,500	2,000			1,000
Chester			2,748,000	233,500	500	500	
Chesterfield	6,500	170,800	1,894,000			270,000	2,500
Clarendon	1,684,200	80,750				1,000	
Colleton	4,922,400	781,100			1,000	500	
Darlington	172,500		388,500		2,500	21,500	1,000
Dillon	611,000	24,000	34,000		2,000		
Dorchester	2,709,400	291,500			1,000	500	
Edgefield			1,745,500	25,000			
Fairfield			4,056,600	98,000		1,000	1,000
Florence	540,100	161,500	133,000		500	500	1,000
Georgetown	4,718,300	130,250	500		4,000		1,000
Greenville			841,000	33,500	1,000	2,500	2,500
Greenwood			2,811,750	10,000		500	1,500
Hampton	1,470,000	655,200	26,000		3,000	15,000	
Horry	2,060,500	169,500	500		4,500	3,000	500
Jasper	2,773,000	643,200	12,000		18,000	21,500	8,000
Kershaw	248,000	3,800	1,251,700	227,000		236,500	2,000
Lancaster		800	1,722,100	244,000			
Laurens			2,067,100	48,500			1,500
Lee	232,700	54,800	97,400				1,000
Lexington	177,000	2,500	597,250	239,500	3,000	285,500	3,500

**SEEDLING DISTRIBUTION FROM STATE NURSERIES AND
OTHER SOURCE BY COUNTIES, SPECIES AND AMOUNTS
1983-84 — Continued**

<i>County</i>	<i>Improved Coastal Loblolly</i>	<i>Regular Coastal Loblolly</i>	<i>Improved Piedmont Loblolly</i>	<i>Regular Piedmont Loblolly</i>	<i>Slash</i>	<i>Longleaf</i>	<i>Yellow Poplar</i>
Marion	314,000	259,500	195,000		27,000		500
Marlboro	611,500	105,500	161,000			50,000	
McCormick			1,269,250	65,000			
Newberry			1,826,000	49,000			1,000
Oconee			491,000	18,500			1,500
Orangeburg	2,747,000	416,700	191,000			5,500	2,000
Pickens	2,000		390,500	183,500	6,500	1,000	3,500
Richland	585,400	2,500	1,905,450	180,000	1,000	1,500	4,500
Saluda	11,000		1,356,000	83,500	500		
Spartanburg			1,608,000	28,000	500	500	3,500
Sumter	364,700	12,800	122,500	1,000	3,000	93,500	1,000
Union			1,804,500	1,000		500	500
Williamsburg	4,062,400	409,750	324,000			16,500	1,000
York			1,235,500	9,500		2,500	1,000
Sub Totals	41,287,700	7,583,000	42,925,900	3,504,000	92,000	1,521,000	69,500
Out of State	126,000	30,000	500,000				7,200
TOTALS	41,413,700	7,613,000	43,425,900	3,504,000	92,000	1,521,000	76,700

**SEEDLING DISTRIBUTION FROM STATE NURSERIES AND
OTHER SOURCE BY COUNTIES, SPECIES AND AMOUNTS
1983-84**

<i>County</i>	<i>Baldcypress</i>	<i>Black Walnut</i>	<i>Sycamore</i>	<i>White Pine</i>	<i>Virginia Pine</i>	<i>Redcedar</i>	<i>Arizona Cypress</i>
Abbeville		500		3,500	10,500	4,500	1,500
Aiken	50,000	2,000	1,500	9,000	43,500	19,500	
Allendale		500		3,500	14,500	2,000	
Anderson		1,000		21,000	40,000	11,000	500
Bamberg				1,000	3,000		
Barnwell			20,000	7,500	3,000	3,000	
Beaufort	3,000		1,000	1,000	30,500	20,500	6,000
Berkeley	10,000				6,000	2,500	2,000
Calhoun	2,500	3,000	500	4,000	8,000	7,000	500
Charleston	500	1,000		4,500	25,500	9,000	
Cherokee		1,500		13,500	13,500	2,000	
Chester		1,000		3,000	39,500	500	
Chesterfield	3,500	1,000		27,500	5,000	9,800	
Clarendon				3,500	15,500	3,000	
Colleton	1,000	500		4,000	20,000	3,500	2,000
Darlington				8,000	12,500	8,000	1,000
Dillon				3,500	2,000	1,000	
Dorchester	1,000	1,000		1,000	26,500	4,500	500
Edgefield	500	500		5,500	8,500	2,500	500
Fairfield		500		3,500	19,500	4,500	
Florence	2,500			8,000	14,500	8,000	1,000
Georgetown	250	250			3,000	1,500	
Greenville	1,000	1,500	500	39,000	55,500	10,000	2,500
Greenwood		2,000		6,000	10,500	2,500	500
Hampton				2,500	5,000	1,000	
Horry	250	250		9,500	10,000	7,500	
Jasper		1,000			7,000	2,000	
Kershaw	500		500	15,000	21,000	49,500	
Lancaster		1,000		22,000	19,500	2,300	
Laurens	1,000	6,500		20,000	38,500	2,500	500
Lee	500			6,500	11,500	1,800	
Lexington	500	500	1,500	32,000	71,500	43,500	3,000

**SEEDLING DISTRIBUTION FROM STATE NURSERIES AND
OTHER SOURCE BY COUNTIES, SPECIES AND AMOUNTS
1983-84 — Continued**

<i>County</i>	<i>Baldcypress</i>	<i>Black Walnut</i>	<i>Sycamore</i>	<i>White Pine</i>	<i>Virginia Pine</i>	<i>Redcedar</i>	<i>Arizona Cypress</i>
Marion	7,000			7,500	2,000	1,000	
Marlboro				8,000	2,500	500	
McCormick		2,000					
Newberry				2,000	8,600	4,000	
Oconee		2,000		188,000	21,500	10,500	1,500
Orangeburg	4,500	3,000		26,000	77,000	14,500	500
Pickens		2,500	500	189,500	20,500	13,000	500
Richland	1,000	2,500	500	21,500	65,000	24,800	1,500
Saluda				12,500	14,000	1,000	500
Spartanburg	500	1,500		62,000	40,000	7,000	500
Sumter		500	500	13,000	40,500	18,400	500
Union		500		2,500	17,000		
Williamsburg	2,000			2,000	14,000	2,500	500
York	1,000	1,500	500	58,500	32,000	4,000	1,000
Sub Totals	94,500	43,000	27,500	881,500	969,100	351,600	29,000
Out of State				100,000	500		
TOTALS	94,500	43,000	27,500	981,500	969,600	351,600	29,000

**SEEDLING DISTRIBUTION FROM STATE NURSERIES AND
OTHER SOURCE BY COUNTIES, SPECIES AND AMOUNTS
1983-84**

<i>County</i>	<i>Sweetgum</i>	<i>Leyland Cypress</i>	<i>Sand Pine</i>	<i>Misc.</i>	<i>Totals</i>
Abbeville					2,761,000
Aiken		150	500	50	3,624,000
Allendale		50			1,834,550
Anderson		300			823,300
Bamberg					1,157,000
Barnwell			50,000		4,328,000
Beaufort	500	450	1,000		1,717,950
Berkeley					3,947,750
Calhoun					1,886,500
Charleston		100	500		1,893,500
Cherokee	500	100			1,698,600
Chester					3,026,500
Chesterfield	500				2,391,100
Clarendon					1,787,950
Colleton		160	500		5,736,660
Darlington	500	200			795,200
Dillon					677,500
Dorchester		300	500		3,037,700
Edgefield		300			1,788,800
Fairfield		150			4,184,750
Florence		600			871,200
Georgetown			2,000		4,861,050
Greenville		50			990,550
Greenwood					2,845,250
Hampton					2,177,700
Horry		100			2,266,100
Jasper					3,485,700
Kershaw					2,055,500
Lancaster					2,011,700
Laurens		200			2,186,300
Lee			500		406,700
Lexington		275	500		1,461,525

**SEEDLING DISTRIBUTION FROM STATE NURSERIES AND
OTHER SOURCE BY COUNTIES, SPECIES AND AMOUNTS
1983-84 — Continued**

<i>County</i>	<i>Sweetgum</i>	<i>Leyland Cypress</i>	<i>Sand Pine</i>	<i>Misc.</i>	<i>Totals</i>
Marion			3,000		816,500
Marlboro					939,000
McCormick					1,336,250
Newberry					1,890,600
Oconee	500			175,500	910,500
Orangeburg		1,067	3,360		3,492,127
Pickens		200			813,700
Richland		300		2,650	2,800,100
Saluda		600			1,479,600
Spartanburg		200			1,752,200
Sumter		50	2,000		673,950
Union		200			1,826,700
Williamsburg		150			4,834,800
York					1,347,000
Sub Totals	2,500	6,252	64,360	178,200	99,630,612
Out of State					763,700
TOTALS	2,500	6,252	64,360	178,200	100,394,312

Miscellaneous Species

Shortleaf	122,000
Pitch Pine	53,500
Green Spire	150
Crepe Myrtle	1,600
Redbud	450
Dogwood	500
	<hr/>
	178,200

CUMULATIVE SEEDLING PRODUCTION

<i>Year</i>	<i>Total Distributed (State Nurseries)</i>	<i>Total Distributed All Sources</i>
1928-29	142,000	142,000
1929-30	148,000	148,000
1930-31	986,000	986,000
1931-32	976,000	976,000
1932-33	996,000	996,000
1933-34	1,031,000	1,031,000
1934-35	7,529,000	7,529,000
1935-36	23,000,000	23,000,000
1936-37	22,000,000	22,000,000
1937-38	11,192,000	11,192,000
1938-39	10,854,000	10,854,000
1939-40	12,244,000	12,244,000
1940-41	21,165,423	21,165,423
1941-42	10,275,037	10,275,037
1942-43	4,742,010	4,742,010
1943-44	5,662,608	5,662,608
1944-45	1,926,840	1,926,840
1945-46	6,402,255	6,402,255
1946-47	1,962,600	1,962,600
1947-48	11,356,990	11,356,990
1948-49	30,338,775	30,338,775
1949-50	29,501,955	29,501,955
1950-51	20,615,315	20,615,315
1951-52	16,619,000	16,619,000
1952-53	22,035,850	32,246,298
1953-54	36,210,100	42,852,314
1954-55	35,373,025	45,182,255
1955-56	34,413,550	42,931,755
1956-57	55,753,600	69,658,736
1957-58	60,846,200	93,369,084
1958-59	123,985,000	166,351,000
1959-60	147,146,365	187,516,418
1960-61	145,609,075	158,330,575
1961-62	71,892,420	83,844,470
1962-63	56,191,241	64,201,541
1963-64	51,445,597	62,423,597
1964-65	49,009,893	60,683,493
1965-66	42,310,685	56,529,185
1966-67	48,575,190	69,597,590
1967-68	39,970,136	58,812,136
1968-69	29,529,285	51,453,285
1969-70	31,415,430	49,202,630
1970-71	31,939,880	54,540,880
1971-72	23,677,925	41,357,225
1972-73	30,977,800	45,239,100
1973-74	28,443,000	42,305,500
1974-75	40,081,500	55,996,500
1975-76	40,664,387	59,063,387
1976-77	39,795,375	59,238,275
1977-78	45,734,500	64,380,200
1978-79	43,009,533	65,936,933
1979-80	46,374,919	76,206,619
1980-81	53,512,622	86,419,513
1981-82	55,727,828	87,793,028
1982-83	47,798,858	86,265,299
1983-84	50,169,612	100,394,312
TOTAL	1,911,287,189	2,571,989,941

INFORMATION AND EDUCATION SECTION

The purpose of the I & E Section is to produce and disseminate informational and educational materials concerning the wise use and protection of South Carolina's forest resource. Although the Section has unique functions, it exists primarily to provide coordination, promotion, and information concerning the Commission's many programs and services to landowners and the public.

Reorganization of personnel and reduced budgets have required the cancellation of some programs and a re-evaluation of all Section activities. A primary effort in this year has been to review and up-date media contact lists; radio, T.V., newspapers, periodicals, and other contact groups. This has resulted in a reduction in mailing costs and more effective media coverage. Almost twice as many media contacts (688) were made as compared with the previous year (353).

The following are accomplishments in specific program areas:

Forest Management

- Following the March 28 tornado through nine (9) counties, the Section co-ordinated media coverage, arranged interviews with the media, and photographed the effects of the disaster.
- News releases and media contacts were made to inform landowners concerning ongoing forest management services, and the Forest Renewal Program.
- The statewide Arbor Day promotion in conjunction with Clemson University Extension Service continued with Gold Leaf Awards to the city of Greenville and Camden Middle School.
- Two outdoor displays featuring South Carolina's "Commercial Woods" were produced.
- 'Tis the Season, a 10 minute video program on South Carolina's Christmas tree industry was completed.

Nurseries and Tree Improvement

- A media tour and town meeting were held to inform Jasper County residents of the need for and function of the recently acquired Niederhof Seed Orchard.
- Media tours of Creech Seed Orchard, Tilghman Nursery, and Coastal Nursery and Seed Orchard were held to provide information concerning tree improvement programs, seedling production, and sales.

Insect and Disease

- The 1983 State Fair exhibit featured the Integrated Pest Management portable sawmill. The IPM Project demonstrates to landowners the feasibility of utilizing small volumes of beetle killed timber.

- A portable Exposystem display on the Southern Pine Beetle was produced. The display included transparencies with light boxes.

Forest Fire Prevention

- Although the fire season was one of the mildest in recent years, the renewed media contacts resulted in effective coverage of the spring fire season with featured news stories and television coverage. The wire services and South Carolina Network, a statewide news network system of 65 radio stations, provided excellent coverage.
- The Commission's public service announcement featuring a county ranger and the Southern Cooperative Forest Fire Program radio and television spots were distributed to all major commercial stations in the state, Asheville, N. C., and Savannah and Augusta, Georgia.

Information and Education

- VHS video play back units were purchased for each of the seven districts and the state office.
- A new video camera was purchased to record forestry-related occurrences and provide coverage and spot announcements to the media. The video equipment is used to produce educational and training programs.
- South Carolina's Forest Resource Plan was produced in conjunction with the Forest Planner.
- An Instructor Training Course was conducted for new foresters and Ranger Technician candidates.
- Three issues of TREE COUNTRY:S. C., the Commission's in-house newsletter were published.
- Project Learning Tree and other education workshops were held statewide.
- The Commission's catalogue of slide/tape programs was revised and updated.
- Forestry Commission outdoor tower and office signs were redesigned to improve legibility and appearance. Nineteen tower signs were constructed or maintained.
- I&E training was conducted in Camden, Florence, Kingstree, and Newberry Districts.

**INFORMATION AND EDUCATIONAL SUMMARY
1983-84**

	<i>School Programs</i>		<i>Talks</i>		<i>Smokey Bear Programs</i>		<i>Workshops Field Days</i>		<i>Arbor Day</i>		<i>Media</i>			<i>Parades</i>	<i>Exhibits</i>
											<i>Radio</i>	<i>TV</i>	<i>Print</i>		
<i>District</i>	<i>#</i>	<i>Attnd.</i>	<i>#</i>	<i>Attnd.</i>	<i>#</i>	<i>Attnd.</i>	<i>#</i>	<i>Attnd.</i>	<i>#</i>	<i>Attnd.</i>					
Camden	10	300	67	2,508	55	4,260	19	1,333	7	1,035	2	2	8	9	3
Florence	26	637	52	1,742	14	2,400	4	193	2	150	8	13	53	13	4
Kingstree	2	120	37	1,246	—	—	3	150	1	30	8	5	37	4	3
Newberry	106	4,442	79	2,124	16	520	26	7,298	4	730	19	1	57	11	11
Orangeburg	23	1,093	52	1,913	8	640	7	226	1	250	9	1	19	19	—
Spartanburg	36	1,765	29	902	5	2,660	37	1,303	2	90	52	9	115	12	43
Walterboro	5	390	73	2,841	—	—	35	570	—	—	16	9	82	4	5
TOTAL (Field)	208	8,747	389	13,276	98	10,480	131	11,073	17	2,285	114	40	371	72	69
Columbia	—	—	43	1,607	—	—	6	184	—	—	56	31	76	—	23
TOTAL	208	8,747	432	14,883	98	10,480	137	11,257	17	2,285	170	71	447	72	92

TRAINING SECTION

The Training Section plans, coordinates, and evaluates the Forestry Commission training in all subject areas.

Each year a training schedule is prepared in cooperation with all program managers. This helps to set priorities and to ensure that needed training is scheduled, planned, and presented in a logical order.

Standard training programs have been prepared for new employees in all job areas. These programs will ensure that all subjects are covered in a logical order and will help the new employee reach the standards for the assigned job as soon as practical. Programs are in use for foresters, district rangers, county rangers, district forest technicians, fire tower operators, wardens, mechanics, radio technicians, staff assistants/clerks, and nurserymen/seed orchard managers.

A training library including manuals, films, tapes, slides, lesson plans, etc., is maintained.

Most training is done using Forestry Commission personnel as instructors. Other schools and instructors are utilized when possible. These sources include the U. S. Forest Service, Clemson University, University of South Carolina, South Carolina State Personnel Training Division, industry representatives, the South Carolina Criminal Justice Academy, and others.

Training highlights for 1983-84:

Basic Fire Fighting School, four days. This was conducted for all new personnel with fire control responsibilities.

Prescribed Burning School, two days; attended by twenty-five people.

Basic Law Enforcement. Five people attended the three-week special basic course at the S. C. Criminal Justice Academy and were commissioned as forest law enforcement officers.

Law Enforcement In-Service, two days. This was conducted at the S. C. Criminal Justice Academy for seventy-three personnel who hold law enforcement commissions.

Fire Team Training, two days; conducted for twelve new members of the Forestry Commission's Fire Team.

Employee Performance Management System. Two hours of follow-up training was conducted for all supervisory personnel.

Rural Fire Department Training. This program, conducted by the Forestry Commission to train Rural Fire Department personnel, was presented to nineteen departments with 435 personnel receiving training.

INSECT AND DISEASE SECTION

The Insect and Disease Section, in cooperation with the State Plant Pest Regulatory Service and the U. S. Forest Service, maintains a program to detect, evaluate, and suppress forest pests. Through cooperative agreements, these agencies make their technical assistance and advice available to the Forestry Commission.

The current forest pest detection and reporting system involves the reporting by field foresters of forest pests that are causing abnormal losses, require control action, or which may present new problems. Aerial surveys are made periodically of specific pests to determine occurrence and the need for suppression action.

Major Insect Problems

Hardwood Defoliators

An outbreak of hardwood defoliators which began in 1981 in the Coastal Region continued this year, although many areas reported defoliator population collapses. The Insect and Disease Section worked with Wachesaw Plantation (Georgetown County) in evaluating a spring cankerworm problem and providing technical assistance for an aerial spray on 207 acres. Seabrook Island (Charleston County) experienced an outbreak of white-marked tussock moth. They received similar assistance and aerielly treated 250 acres. Other areas surveyed which did not need controls were Hagley Estates (Georgetown County), Briarcliffe Estates (Horry County), and Moss Creek Plantation (Jasper County). Both treated areas had excellent insect control and will receive post-suppression surveys in 1985.

Southern Pine Beetle

The southern pine beetle outbreak which began in July 1982 continued through this year. Counties infested by these beetles included Abbeville, Anderson, Berkeley, Charleston, Cherokee, Fairfield, Greenville, Greenwood, Jasper, Kershaw, Lancaster, Laurens, McCormick, Newberry, Oconee, Pickens, Richland, Spartanburg, and Union. Losses to the beetles were heaviest in the northwestern counties. Overall losses were 41,850 cords and 20.1 million board feet of pine valued at \$3.9 million. Salvage of this timber was fair with 46,843 cords and 1.9 million board feet salvaged at a salvage value of \$809,594.

The Forestry Commission applied for and received funding from the U. S. Forest Service to continue a control program. Present aerial surveys indicate that beetle activity will continue.

Major Disease Problems

Pine Tip Blight

A multiple forking of the terminals on loblolly and Virginia pine seedlings at Piedmont Nursery was found to be caused by phomopsis, a fungus disease. The origin of the disease was traced to old seedlings which had been dumped at the nursery. These old seedlings were destroyed and fungicidal treatments this year should clear up the condition.

Oak Wilt

Oak wilt disease has been identified in Chesterfield, Kershaw, Lancaster, Lee, and Richland Counties. It appears to be spreading slowly and causing losses only to low value oaks. Since there is potential for loss of valuable trees, including shade trees, periodic surveys are made to evaluate the spread.

Dutch Elm Disease

Dutch Elm disease has been confirmed in Aiken, Anderson, Chester, Chesterfield, Edgefield, Fairfield, Greenville, Greenwood, Kershaw, Lancaster, Laurens, Lexington, Marlboro, Newberry, Oconee, Pickens, Richland, Saluda, Spartanburg, and York Counties. It is expected to gradually spread through the state because the primary agent of spread, the smaller European elm bark beetle, occurs statewide.

Integrated Pest Management

The Forestry Commission, Clemson University, and the U. S. Forest Service began an integrated pest management demonstration project in South Carolina in 1982. During the first phase of this project, the Commission acquired a portable sawmill. The mill is being used to demonstrate the feasibility of salvaging timber from small southern pine beetle spots by sawing the infested wood into lumber at the site of the beetle infestation. Demonstrations of the mill are being conducted in the pine beetle infestation zone.

Miscellaneous Insect and Disease Checks

Commission foresters made approximately 1,990 field checks of insect and disease problems and made recommendations for prevention and control. Other inquiries were handled by telephone, mail, and personal contact.

STATE FORESTS

There are four state forests operated by the Forestry Commission:

Cassatt State Forest (Kershaw County)	462 acres
Harbison State Forest (Richland County)	2,188 acres
Manchester State Forest (Sumter County)	28,830 acres
Sand Hills State Forest (Chesterfield County)	92,000 acres

Prior to acquisition by the state, most of the land included in the state forest system had been heavily cut over and generally misused. The primary efforts since acquisition by the state have been directed to building up the growing stock in existing forest stands, planting sub-marginal old fields to desirable species of forest trees, developing adequate multiple use and wildlife management programs, and protecting endangered species.

It is the objective of the Forestry Commission to practice the principles of multiple use and sustained yield timber management on forest lands under the agency's jurisdiction and to promote practices to protect and enhance environmental quality in the management of all forest ownerships.

Silvicultural practices are carried out on small blocks interspersed throughout a compartment. Even age management produces compartments representing all age groups of timber, such as: newly-cleared areas favored by doves, quail, and deer; young, dense stands necessary for cover and concealment; and older, more open stands also needed for quail, deer, and the endangered red-cockaded woodpecker. Den trees for squirrels are reserved. Game census reports indicate this method of management produces optimum numbers of game species and timber production with costs of timber management not adversely affected.

Payment to Counties

Twenty-five percent of the gross receipts of all state forests operations is paid in lieu of taxes to the counties in which the forest is located. This year payments to counties will be:

Chesterfield (Sand Hills State Forest)	\$141,495.15
Darlington (Sand Hills State Forest)	1,718.57
Sumter (Manchester State Forest)	207,856.15
Richland (Harbison State Forest)	7,639.63

In the past 26 years since the passage of this Act, the Forestry Commission has paid a total of \$2,707,063.78 to counties where state forest lands are located as follows:

Chesterfield	\$1,673,424.95
Darlington	37,268.82
Sumter	930,605.73
Richland	57,269.79
Kershaw	8,494.49

CASSATT STATE FOREST

Cassatt State Forest, with 462 acres, is located about two miles north of Cassatt, S. C. It was deeded to the State by the late J. R. West on May 28, 1935. Cassatt Lookout Tower and a dwelling for the tower attendant were erected by the Civilian Conservation Corps (CCC) and continue to be used for fire detection.

Sand Hills State Forest personnel maintain a system of boundary firebreaks. Breaks have been plowed around plantations and along the public road which crosses this property and all boundary lines have been permanently marked.

HARBISON STATE FOREST

Harbison State Forest, containing 2,188 acres, is located in Richland County. The Richland County fire control organization is responsible for fire protection. No fires burned on the forest during the year. Two timber sales were conducted on the forest. A total of 145,119 board feet of sawtimber and 844 cords of pulpwood was harvested, producing an income of \$38,877.71.

MANCHESTER STATE FOREST

Manchester State Forest, located south of Wedgefield in Sumter County, contains 28,830 acres. From 1939 to 1955, this land was leased by the Forest Commission from the federal government. The state received title to this property on June 28, 1955.

Silvicultural Practices

Sixty-six acres were prepared for tree planting by drum chopping and disking. There were 1,598 acres prescribed burned and 70 acres of longleaf pine were spot treated with herbicide for hardwood control. A total of 265 acres were planted to the following species:

Longleaf pine	100,000
Improved Coastal Loblolly pine	72,500
Improved Virginia pine	500
Red Cedar	500

Forest Protection

Nine forest fires occurred during the year burning a total of 17.1 acres. Firebreaks were maintained in high value and high hazard areas. Periodic checks were made for insect and disease damage. Research in cooperation with the Southeastern Forest Experiment Station is being continued on insect and disease prevention.

Four cases were prosecuted for game law violations: killing doe deer, hunting without a license, and two for fishing without a permit.

Game Management

An intensified program of game management is conducted in cooperation with Sumter County Game & Fish Association and the S. C. Wildlife and Marine Resources Department. Endangered species biologists provided recommendations for managing mature longleaf pine as colony sites and support stands for the red cockaded woodpecker. In addition to utilizing power line right-of-way for wildlife plantings, permanent wildlife fields and food patches have been established. Planting and/or maintenance was carried out on 162 wildlife plots containing 96 acres. Receipts from hunting and fishing permits totaled \$10,754.55 this year.

Of the 7,791 permits sold, 1,299 were for deer hunting, 697 were dove permits, 899 were for quail hunting, 1,555 were combination rabbit and squirrel permits, 37 were raccoon permits, 6 were fox permits, 1 was a small game combination permit, and 30 were for primitive weapons hunts. A total of 3,267 fishing permits were sold.

Recreation other than hunting and fishing includes hiking, berry picking, sightseeing, motorcycling, horseback riding, and field trials. A total of 22 organized group activities were held on the forest involving an estimated 1,950 people.

Land Rentals

Agricultural Lands

Agricultural leases were updated during the year; the leases now contain provisions to better protect soil and water resources and to enhance wildlife habitat. Fifteen leases were renewed on 706 acres.

Shaw Air Force Base

The U. S. Air Force leases 7,687 acres of Manchester State Forest for an aerial gunnery range to train pilots from various Air Force bases in the

southeastern United States. The South Carolina Air National Guard has access to the range and uses it frequently.

Receipts

Regular Operating Budget

Fuelwood 401 permits — 368 cords	4,417.00
Pinestraw	4,394.26
Hunting and fishing permits	10,754.55
TOTAL	19,565.81

Niederhof Seed Orchard Development Fund

In May, 1983, the S. C. General Assembly passed an act to authorize the Forestry Commission to borrow an amount not to exceed one million, five hundred thousand dollars (\$1,500,000) to finance the purchase of a tract of land in Jasper County for use as a second generation tree seed orchard, and to provide for the method of repayment of the loan and interest.

All revenues derived from the sale of timber from Forestry Commission lands, less one hundred eight thousand, six hundred seventy dollars (\$108,670) to be credited to the General Fund of the State and those funds normally designated for allocation to counties (25%), can be used for repayment of the loan balance. A portion of the remaining balance, after all other obligations are met, is to be used for reforestation of the harvested acres on the forest.

The Manchester State Forest was designated to provide the bulk of the revenue. Accordingly, the forested acreage on Manchester, except for the Poinsett Gunnery Range, was inventoried in the summer of 1982. The inventory data was used to develop an annual cutting plan to meet the development fund obligations and the Manchester reforestation goals.

In fiscal 1983-84, the following funds were received and paid out for Niederhof Seed Orchard development:

Receipts:

13 Timber Sales (825 acres; 3,724.4 MBF; 4,365 cords)	\$783,227.34
Rentals, leases & miscellaneous sales	48,197.25
Total Receipts	<u>\$831,424.59</u>

Disbursements:

Down payment on land	\$358,409.00
S. C. General Fund payment	108,670.00
Sumter County (25% of gross receipts)	207,856.15
Reforestation: equipment; supplies	31,878.91
Total Disbursements	<u>\$706,814.06</u>

Carry Over Balance from Manchester	\$124,610.53
Carry Over Balance from other state lands	<u>20,086.63</u>
Total Carry Over 1984-85	<u>\$144,697.16</u>

SAND HILLS STATE FOREST

Sand Hills State Forest, located in Chesterfield and Darlington Counties, contains 92,000 acres. Half of the area is administered by the U. S. Fish and Wildlife Service as the Carolina Sandhills National Wildlife Refuge. The Forestry Commission is responsible for forest fire protection and forest management activities on the refuge portion and administers the other half as a multiple use forest. Leased from the federal government for 95 years, the forest became self-supporting in 1966. Revenue accrued over expenses each year is expended on the forest for further improvements and expanded operations.

Silvicultural Practices

During the year 1,727 acres were prescribed burned. Of this total, 1,580 acres were prescribed burned by aerial ignition. This service was by contract with a helicopter flying service.

Forest Protection

Forest boundary lines were disked and firebreaks disked along major roads and railroads for fire protection. The prescribed burning enhances fire protection due to the fuel reduction in burned areas. Thirteen wildfires burned 29.7 acres. Forest insects and diseases were no problem during the year.

Recreation

The Sugar Loaf Mountain recreation area continued to receive heavy use. Besides the naturally formed 150 foot high Sugar Loaf Mountain, there are five picnic shelters, a lake, fireplaces, a flowing well, parking areas, and latrines. Scout troops and other organized groups use this area and facilities for overnight camping. Many auto touring visitors drive through this forest, especially to view the fall leaf colors and to enjoy the blooming rhododendron near Sugar Loaf Mountain in the spring. A nature trail is available for hiking. The trail winds through a typical sand hill branch and an undisturbed wooded area containing many species of mature trees. Use by horse riders continues to increase each year. Hitching posts have been erected.

Game Management

Hunting and fishing are conducted in season by permit on the forest. Cooperation with the State Wildlife Department and the U. S. Fish and Wildlife Service was excellent in game law enforcement. Deer, dove, and quail food patches are planted and maintained by the Forestry Commission.

There are 13 ponds available for fishing on the forest. These are maintained through annual fertilization and weed control. This year 3,233 fishing permits were sold.

Dove, quail, squirrel, deer, and rabbit hunting were permitted on the state forest portion. Permit sales totaled 190 for dove, 124 for squirrel, 665 daily and 2 season for quail, 71 daily and 175 two week season for deer, and 13 for rabbit.

Land Rentals

Twenty-one farm land contracts covering 857 acres were renewed during the year. All of the rented land is planted to corn, beans, grain, or one of the lespedezas. All of these crops benefit the wildlife program.

Receipts

Sawtimber	2,706,741 bd ft	
Pulpwood	4,829 cords	
	435 tons	\$565,343.30
Fuelwood	179 cords	2,153.00
Rentals		11,890.97
Hunting and Fishing Permits		7,386.00
Sale of Tobacco Allotments		42,866.01
Miscellaneous (stumps, straw, etc.)		3,683.92
Less: Indirect Costs		-49,398.41
TOTAL		\$583,924.79

STATE LANDS FOREST MANAGEMENT PROGRAM

The state lands forest management program provides technical forest management assistance to S. C. state agencies which own forest land.

During 1983-84, seven agencies requested and received forestry assistance. Forest product sales totaled 1,633,479 board feet of sawtimber and 3,793 cords of pulpwood for an income of \$309,510.54. Thirty-eight acres were prepared for tree planting and eighty-six acres were planted with tree seedlings.

Accomplishments 1983-84

John de la Howe School — A revised management plan activity schedule was prepared for the 1,056 acre tract.

Dept. of Mental Retardation — The management plan was revised for the 1,748 acres at Whitten Center. Thirteen acres were site prepared for tree planting and 61 acres were planted with tree seedlings.

Division of State Parks — The management plan was revised for the 350 acres comprising Lake Warren State Park.

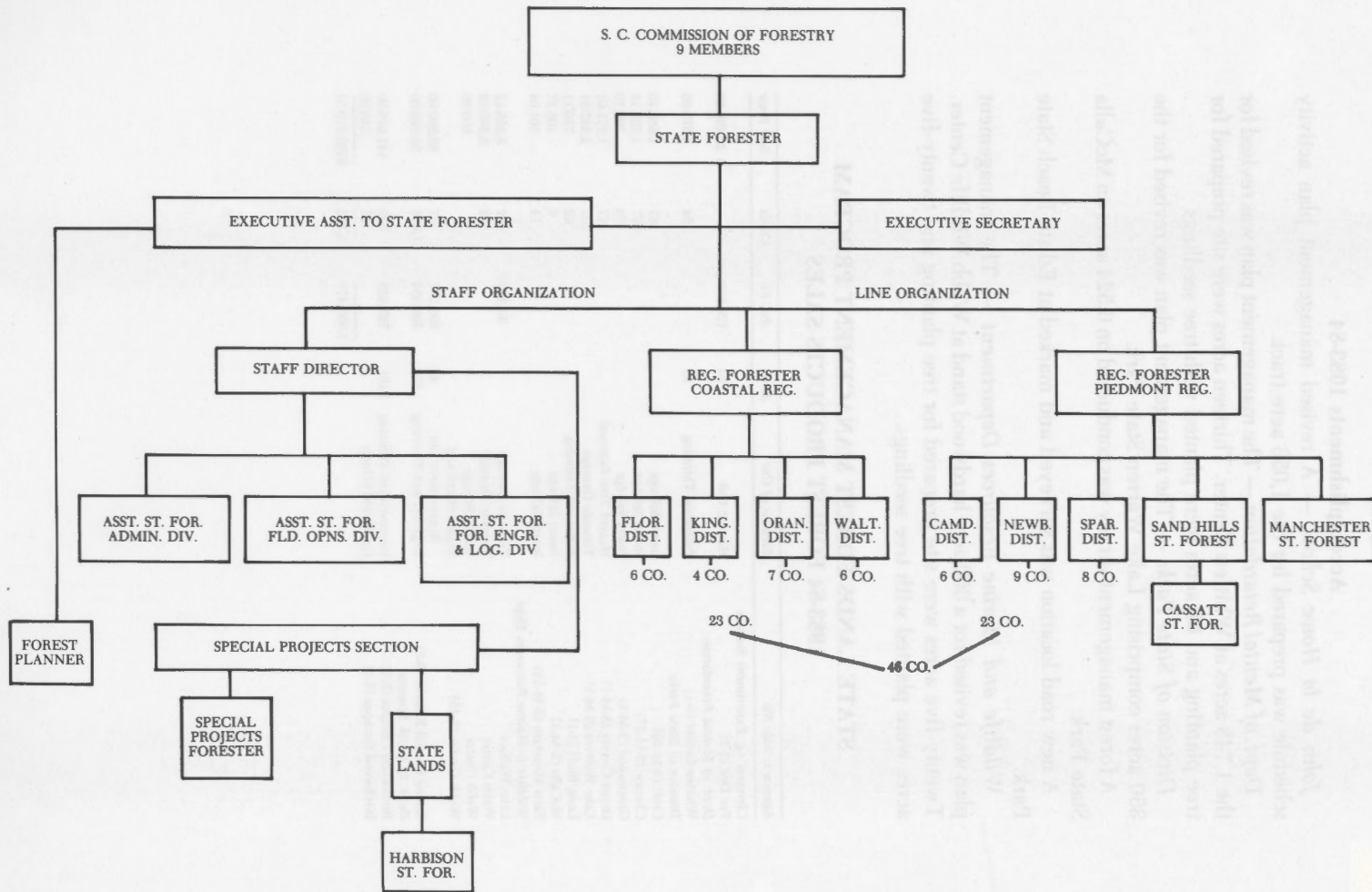
A forest management survey was conducted on 6,524 acres on McCalla State Park.

A new road location was surveyed and marked at Edisto Beach State Park.

Wildlife and Marine Resources Department — The management plan was revised for a 300 acre hardwood stand at Webb Wildlife Center. Twenty-five acres were site prepared for tree planting and twenty-five acres were planted with tree seedlings.

STATE LANDS FOREST MANAGEMENT PROGRAM 1983-84 FOREST PRODUCTS SALES

Agency & Sale No.	Purpose of Cut	Acres	Bd. Ft.	Cords	Sale Price
<i>Clemson Ag. Experiment Station</i>					
Pee Dee (3-2)	Harvest Cut	24	128,000 (est)		\$ 20,499.00
<i>Dept. of Mental Retardation</i>					
Whitten Center (3-1)	Pulpwood Thinning	27		154	1,875.00
<i>Division of State Parks</i>					
Croft (3-M-20)	Insect Salvage			167	1,682.40
Cheraw (3-M-27)	Insect Salvage			397	1,522.16
Greenwood (3-M-8)	Insect Salvage			39	390.70
Jasper County (3-M-1)	Hazard Tree Removal			127	1,271.61
Lake Wateree (3-M-1)	Tornado Damage			207	2,587.91
Long Bluff (3-1)	Pulpwood Thinning			62	710.11
McCalla (3-M-1)	Insect Salvage			9	105.27
Parts Mountain (3-M-13)	Insect Salvage			13	101.04
<i>Wildlife & Marine Resources Dept.</i>					
Lake Wallace	Tornado Damage		83,819	192	8,395.12
Webb Center	Tornado Damage			139	8,586.02
Webb Center	Stump Salvage				905.20
Webb Center (3-15)	Improvement and				
	Regeneration Cut	44	393,377	97	62,890.00
Santee Coastal Reserve (3-5)	Improvement Thinning	430	302,354	1,838	56,629.00
<i>Dept. of Youth Services</i>					
Birchwood Campus (3-2)	Improvement Thinning	161	725,929	329	141,015.00
Birchwood Campus (3-3)	Hardwood Salvage			23	345.00
			1,633,479	3,793	\$309,510.54



HISTORY

Interest in the reforestation and protection of forest land in South Carolina began as early as 1787 when a law was passed which provided for the punishment of any person who wilfully, maliciously or negligently caused fire to do damage to the property of another. Between 1787 and 1912 some eleven bills were passed concerned with forestry, largely dealing with the protection of the forest from fire. Increasing activities in lumber and naval stores directed attention of thoughtful individuals to the fast disappearing timber supply. The growing interest in the future of South Carolina's forest resources culminated in the Act of the General Assembly of South Carolina (1976 Code of Laws, Volume 16, Title 48, Chapter 23), April 26, 1927, creating the State Commission of Forestry. The first appropriation of \$4,000 was made by the General Assembly in 1928.

The first organized forest fire control efforts were initiated in 1928 when groups of landowners in cooperation with the S. C. Forestry Commission formed five forest fire protection organizations for the control of woods fires on some 195,000 acres of woodland. These Forest Protective Associations, as they were known, grew in number and size until 1944 when 24 counties had organized fire protection organizations.

The year 1945 was a banner year for forest fire protection, for it was then that the General Assembly passed the South Carolina Forest Fire Protection Act (1976 Code of Laws, Volume 16, Title 48, Chapter 33) which extended organized forest fire protection to every county in South Carolina — the first of any of the southeastern states to take such a step.

Paralleling the growth of forest fire protection, reforestation of cutover and idle land also came in for ever increasing emphasis. Just two years after the Act creating the agency, the General Assembly authorized the Forestry Commission to establish a nursery and grow forest tree seedlings. This was done on a 5½-acre tract near Camden where 731,400 seedlings were raised the first year. This program has grown to four state nurseries and three industry-operated nurseries which now produce some 100 million forest tree seedlings annually, both pine and hardwood, for planting throughout South Carolina. In 1963 attention was given to improving the quality of seedlings available for planting in South Carolina by establishing seed orchards of superior trees through a cooperative Tree Improvement Program involving both state and industrial interests.

Direct assistance to farmers and other landowners in managing their forest land began in the winter of 1930-31 as a demonstration in Fairfield County of proper thinning, measurement of board foot content of standing timber and use of equipment in suppression of forest fires. Under a cooperative agreement with the county agricultural agents, such demon-

strations were held just two years later in 33 counties. Such direct assistance has grown through the years and has expanded to include individual forest land examinations, 68,648 of which have been made by Commission foresters since 1941. In addition to these examinations, Forestry Commission foresters mark timber for sale for landowners.

From the very beginning of activity by the State Commission of Forestry, education has been a prime function in the fields of fire protection, reforestation and forest management. In the fall of 1928, at the South Carolina State Fair, an exhibit program was initiated that has been carried on continuously since that time. Each year the Forestry Commission places exhibits promoting a forest conservation concept in the State Fair and in every county fair that provides the space. The year 1929 saw expansion of the Forestry Commission's educational efforts when, in cooperation with the American Forestry Association, one, then later three, motion picture trucks showed movies and distributed literature to schools, clubs and other groups. In 1930 it was reported that 320 shows and lectures reached a total of 54,000 men, women and children. An additional boost was given the school program when in 1931, in cooperation with the office of the Supervisor of Vocational Agricultural Education, forestry was added as a study in Vocational Agriculture classes throughout the state.

At present, heavy emphasis continues through all media available — schools, clubs, civic groups, radio and television and the press in telling the forest conservation story and the needs of the future.

It is expected that the nation's demand for softwood from the South will increase from the present 35% to more than 50% by the year 2020. Further, pressure on the available supply of hardwood will increase proportionately. The outlook presents both a challenge and a distinct opportunity to increase appreciably the contribution of the wood-using industry to the economic health of South Carolina. Multiplied many times also will be demands for other uses of the forest — recreation, wildlife management, water conservation and a myriad of other needs in the area of aesthetics. The South Carolina Forestry Commission has been concerned through the years with all aspects of forest conservation and will continue to promote by every means available the wise use of South Carolina's forest resources to meet the demands of the future.